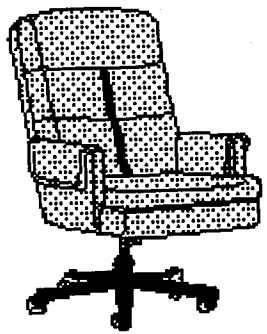
YUCCA MOUNTAIN

GROUND MOTION DATA PACKAGE
VOLUME #3



RECEIVED WITH LETTER DATE 09/11/98
5/97 FILE CODE 102.8

9809180100 - Part 3

Yucca Mountain
Ground Motion Data Package

Volume 3

Expert Point Estimates
Horizontal Component
Revision 1

5/97

Vol 3

Table of Contents

1. Introduction
1.1 Proponent Models
1.2 Spudich Data
1.3 Expert Evaluations

2. Data Plots for Horizontal Peak Acceleration

3. Data Plots for Horizontal Spectral Acceleration: T=20 Hz

4. Data Plots for Horizontal Spectral Acceleration: T=10 Hz

5. Data Plots for Horizontal Spectral Acceleration: T=5 Hz

6. Data Plots for Horizontal Spectral Acceleration: T=2 Hz

7. Data Plots for Horizontal Spectral Acceleration: T=1 Hz

8. Data Plots for Horizontal Spectral Acceleration: T=0.5 Hz

9. Data Plots for Horizontal Spectral Acceleration: T=0.3 Hz

10. Data Plots for Horizontal Peak Velocity

1. Introduction

This volume contains plots of the experts Revision 1 point estimates for the random horizontal component ground motion for the 51 cases listed in Table 1-1. In each figure, the upper plot shows the median ground motion and the lower plot shows the aleatory uncertainty.

1.1 Proponent Models

The proponent models with various adjustments are plotted for each case. Not all of the possible combinations of proponent models and adjustments are shown. In particular, no modifications have been made to the finite fault and blast models. The point source model is for a stress drop of 60 bars.

1.2 Spudich Data

The rock site data from Spudich et al (1996) has been scaled by the Campbell crustal/site scaling factor. The data are selected from the following bins:

Magnitude: ± 0.5 mag units from the case magnitude

Distance: 0 - 30 km
30 - 100 km
100 - 200 km

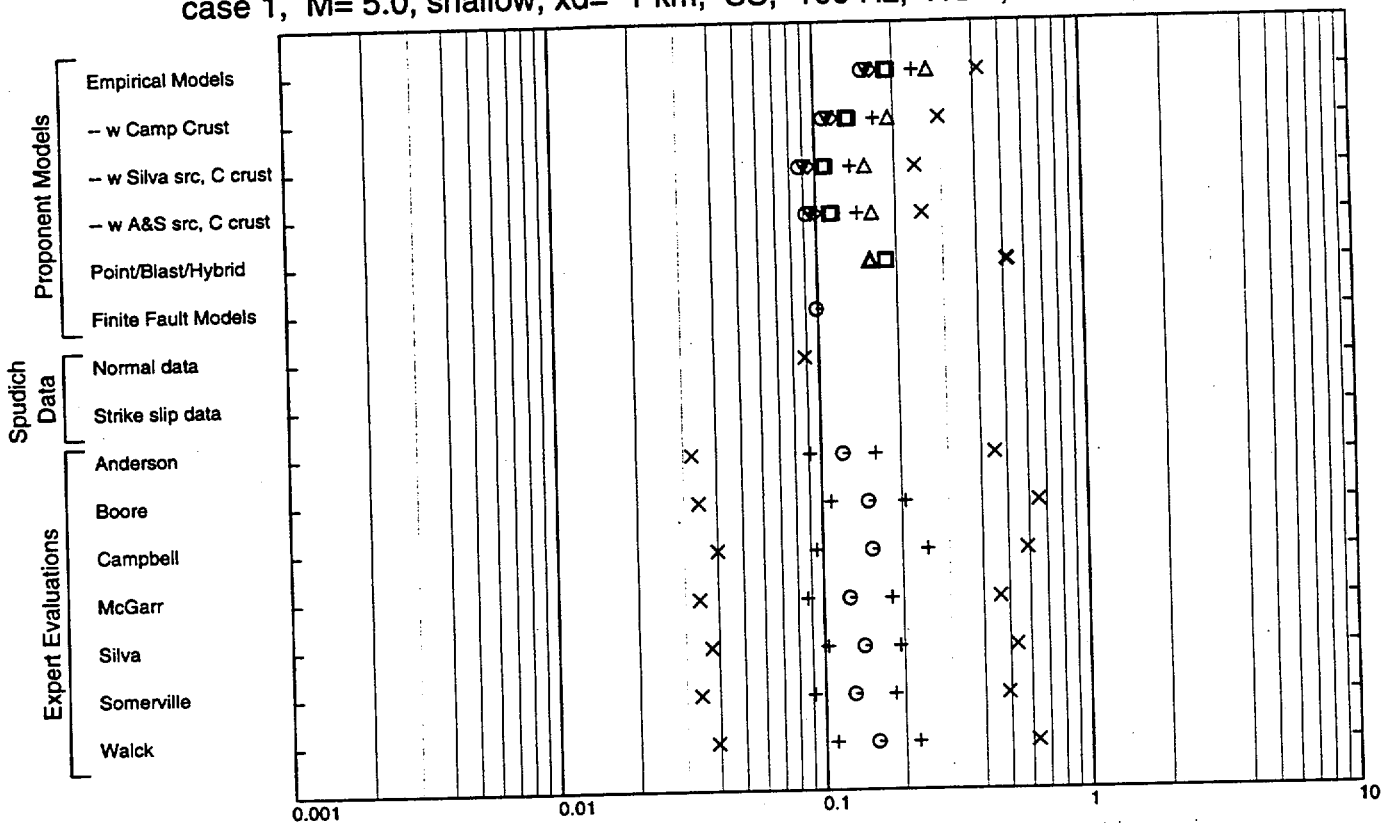
The recorded ground motion is scaled to the magnitude and distance of the specific case using the point source model to define the scaling relation.

The standard deviation of the Spudich data is represented by the SEA empirical model and is not shown as a separate item.

1.3 Expert Evaluations

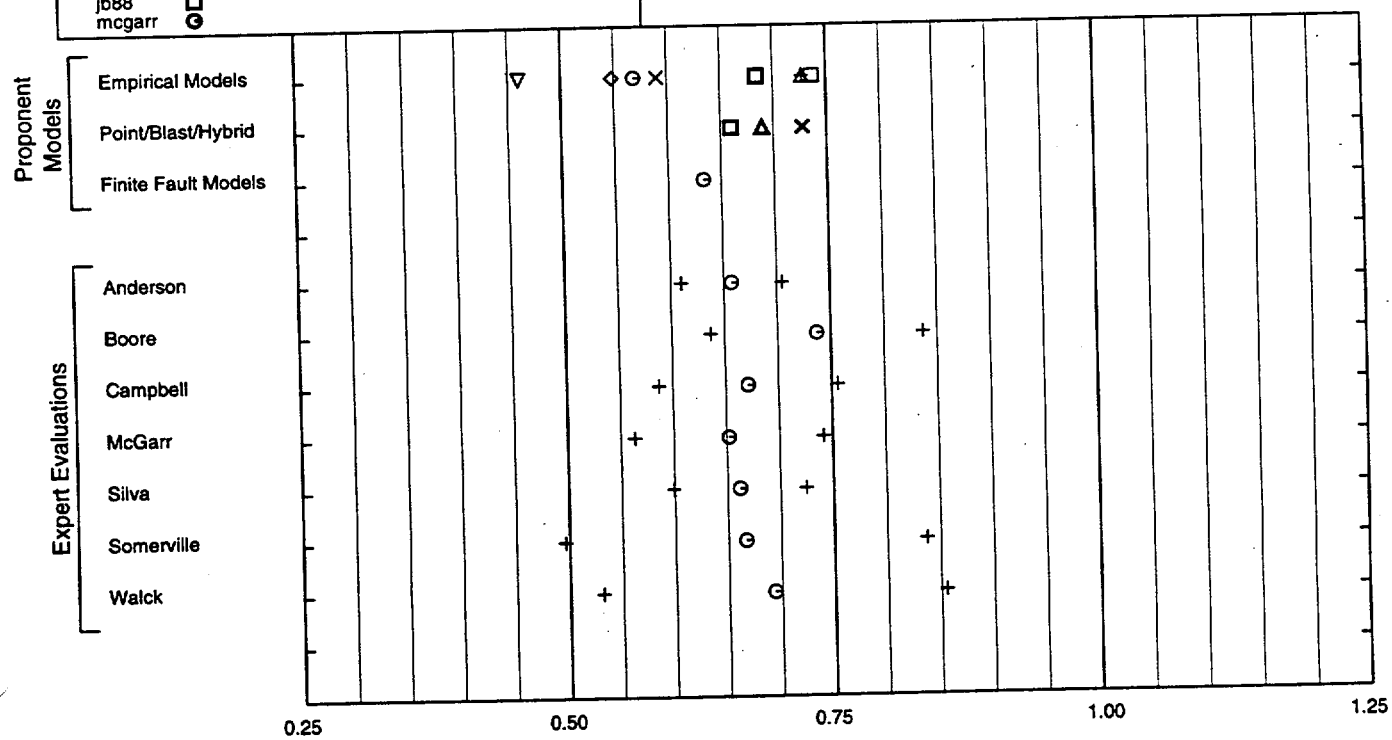
The circle indicates the median estimate, the crosses show $\pm \sigma_\mu$ from the median (plus and minus one epistemic standard deviation), and the crosses show $\pm 2\sigma$ from the median (plus and minus two aleatory standard devations) .

case 1, M= 5.0, shallow, xd= 1 km, SS, 100 Hz, HOR, 6/5/97, Rev 1

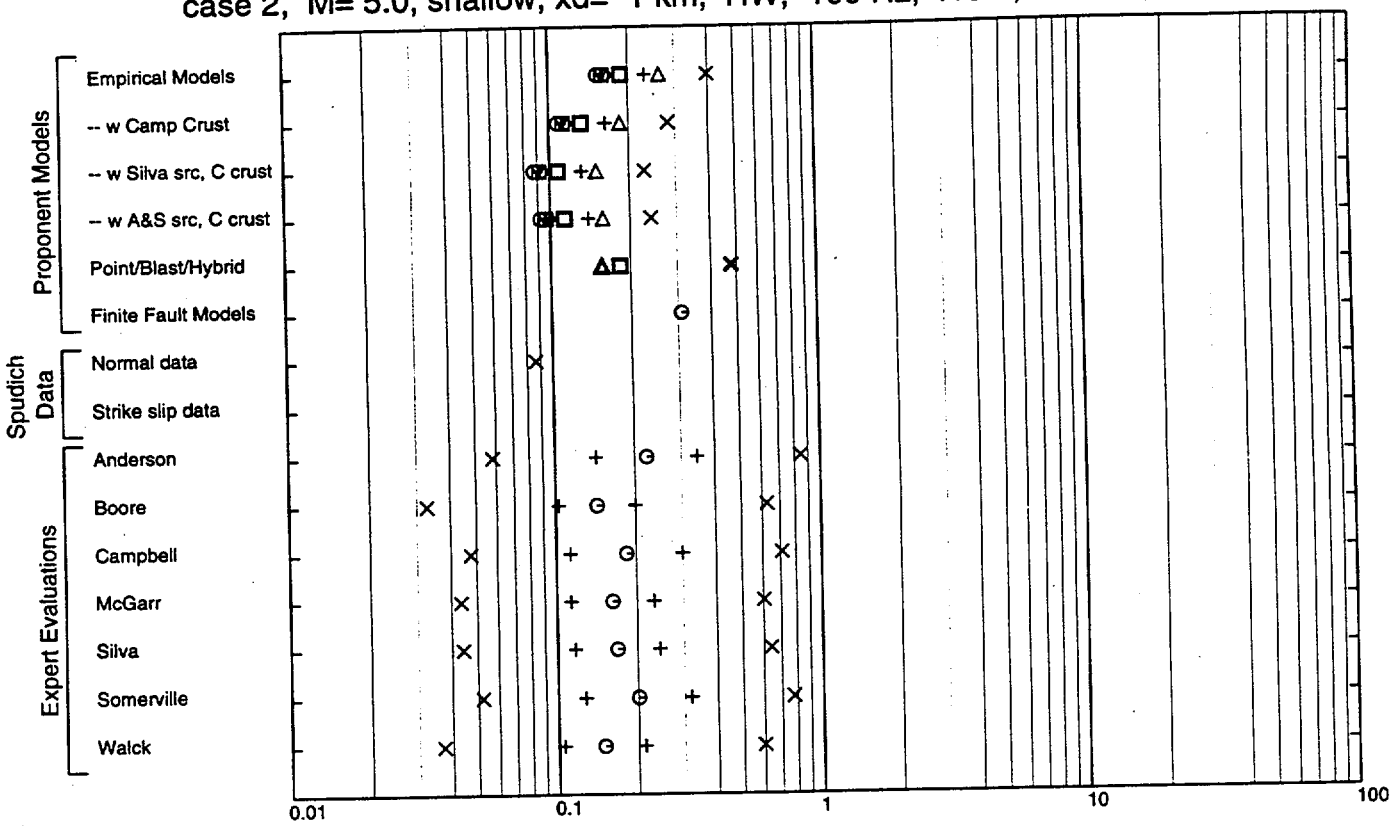


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



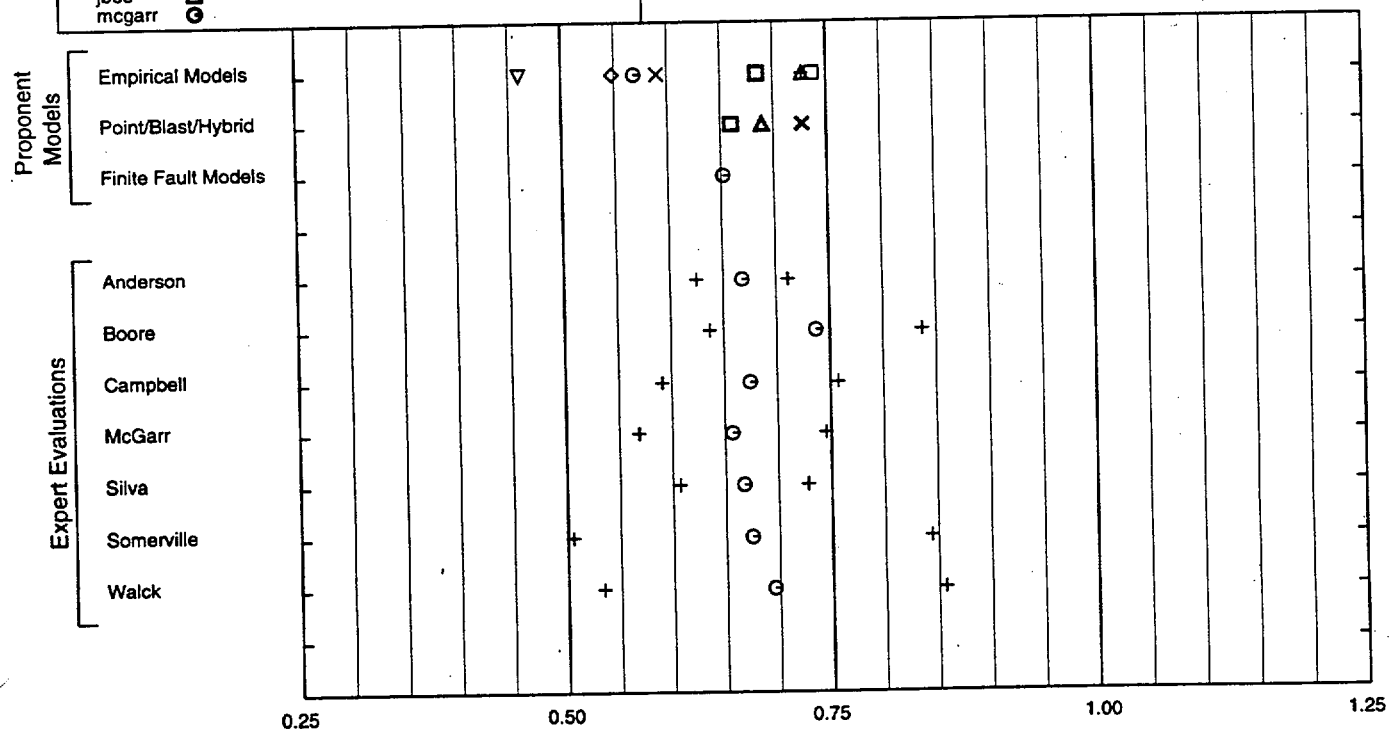
case 2, M= 5.0, shallow, xd= 1 km, HW, 100 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

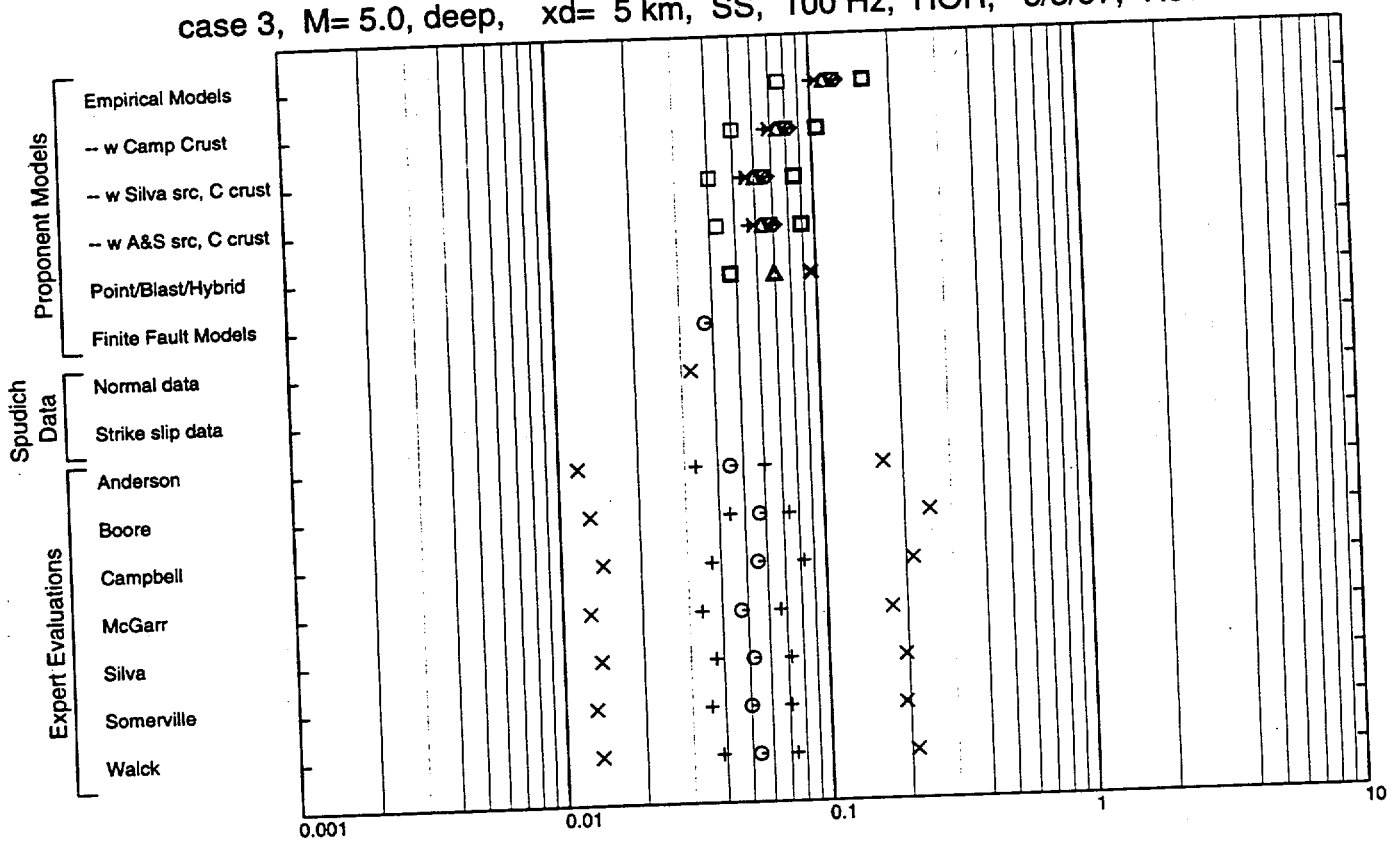
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



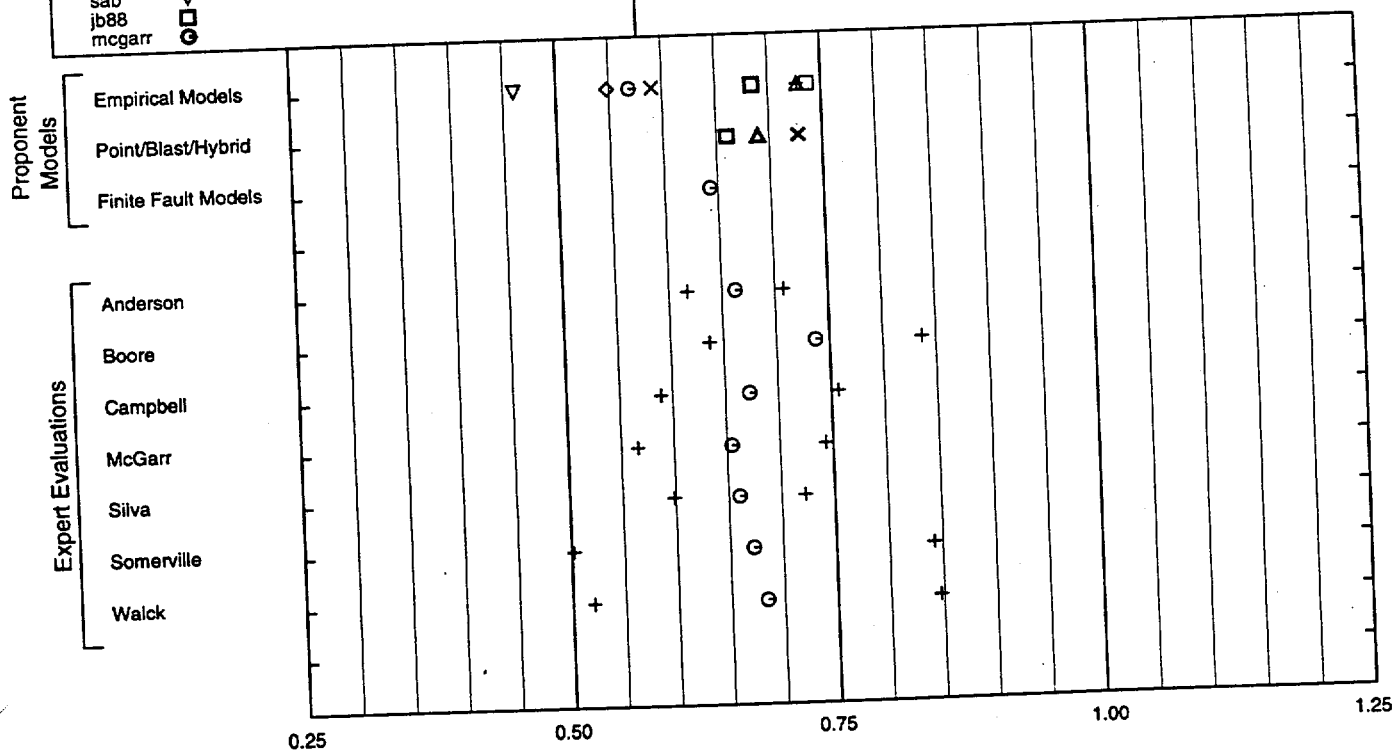
Aleatory Sigma (LN units) w/ Comp Var.

case 3, M= 5.0, deep, xd= 5 km, SS, 100 Hz, HOR, 6/5/97, Rev 1

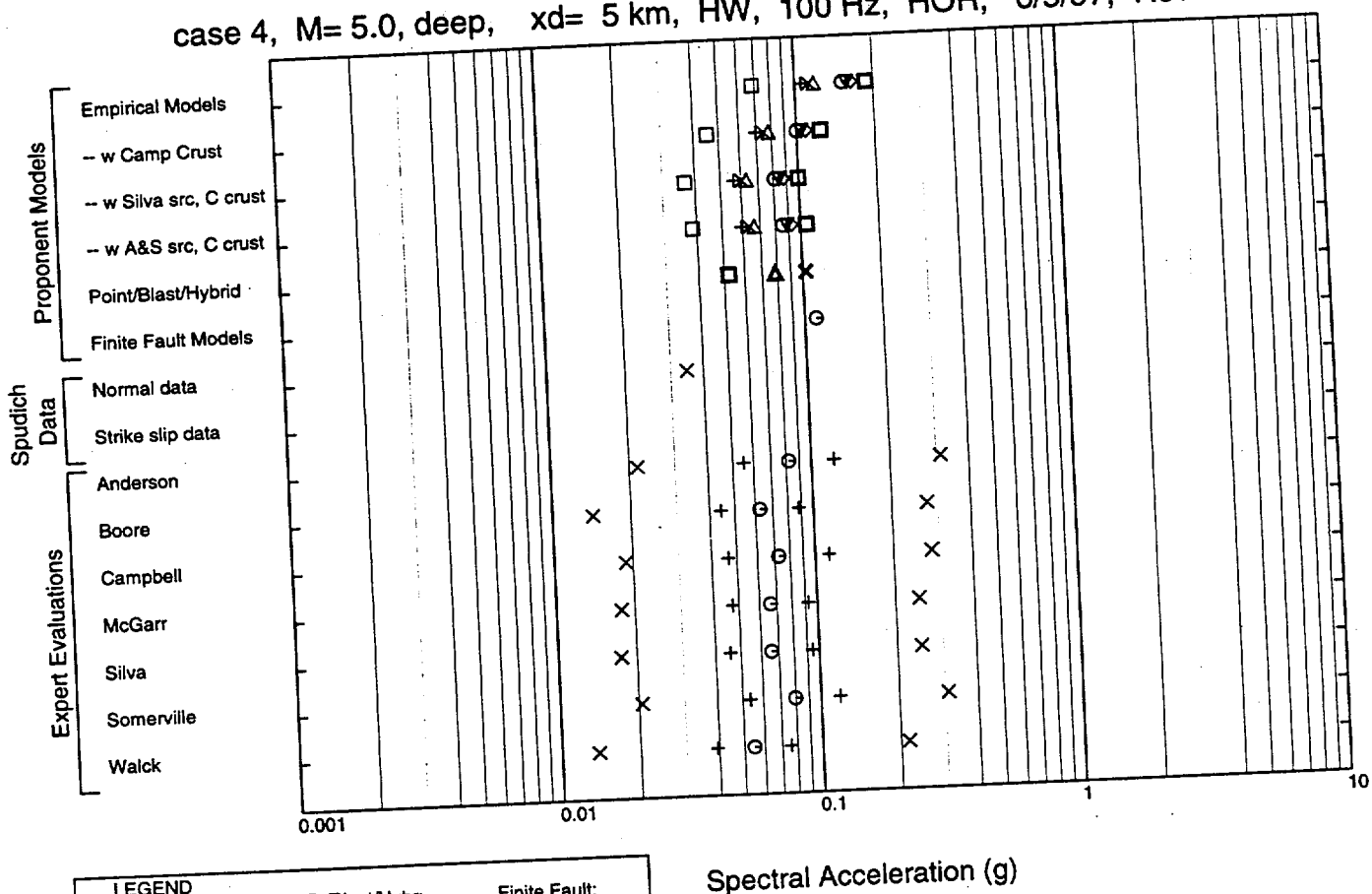


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

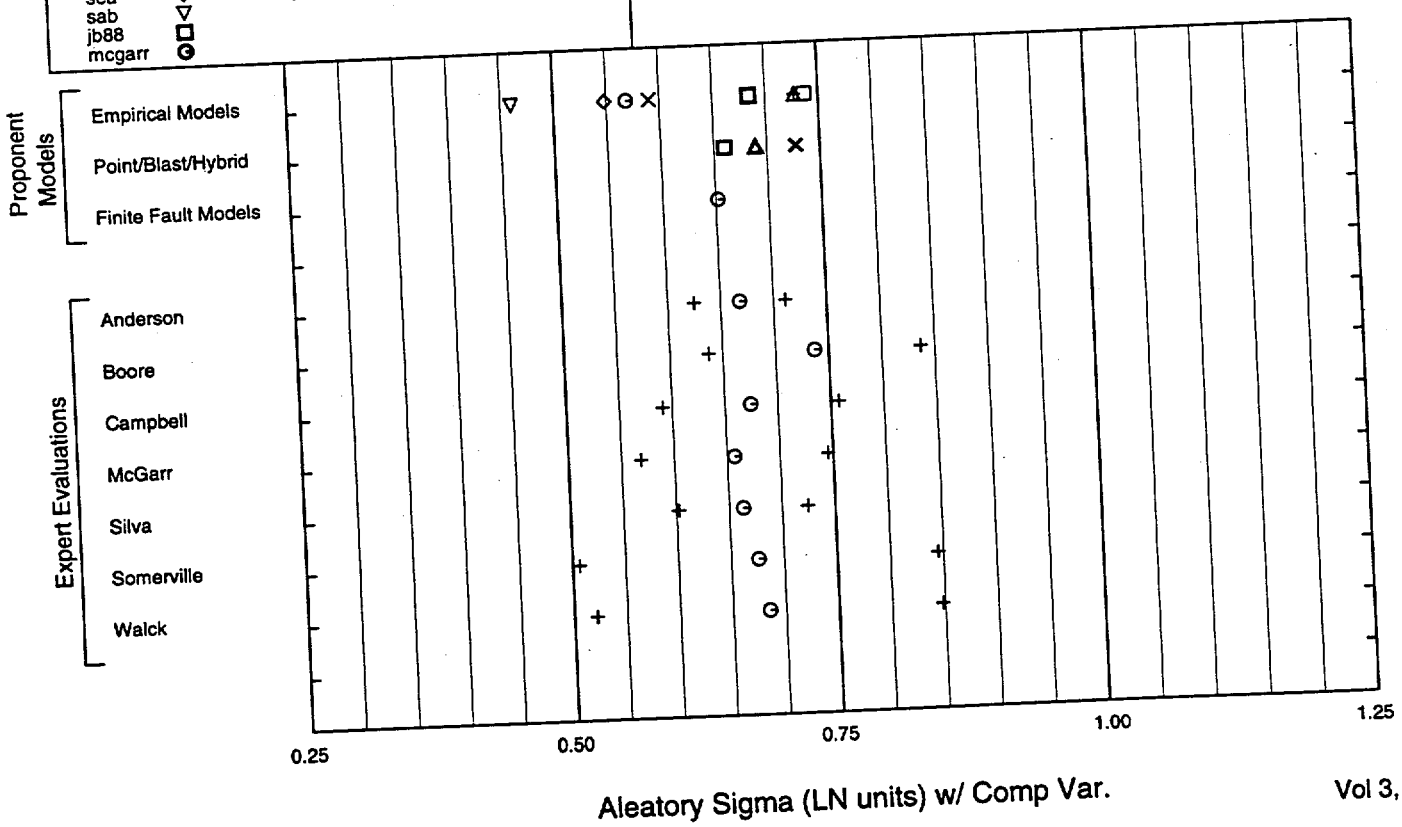


case 4, M= 5.0, deep, xd= 5 km, HW, 100 Hz, HOR, 6/5/97, Rev 1

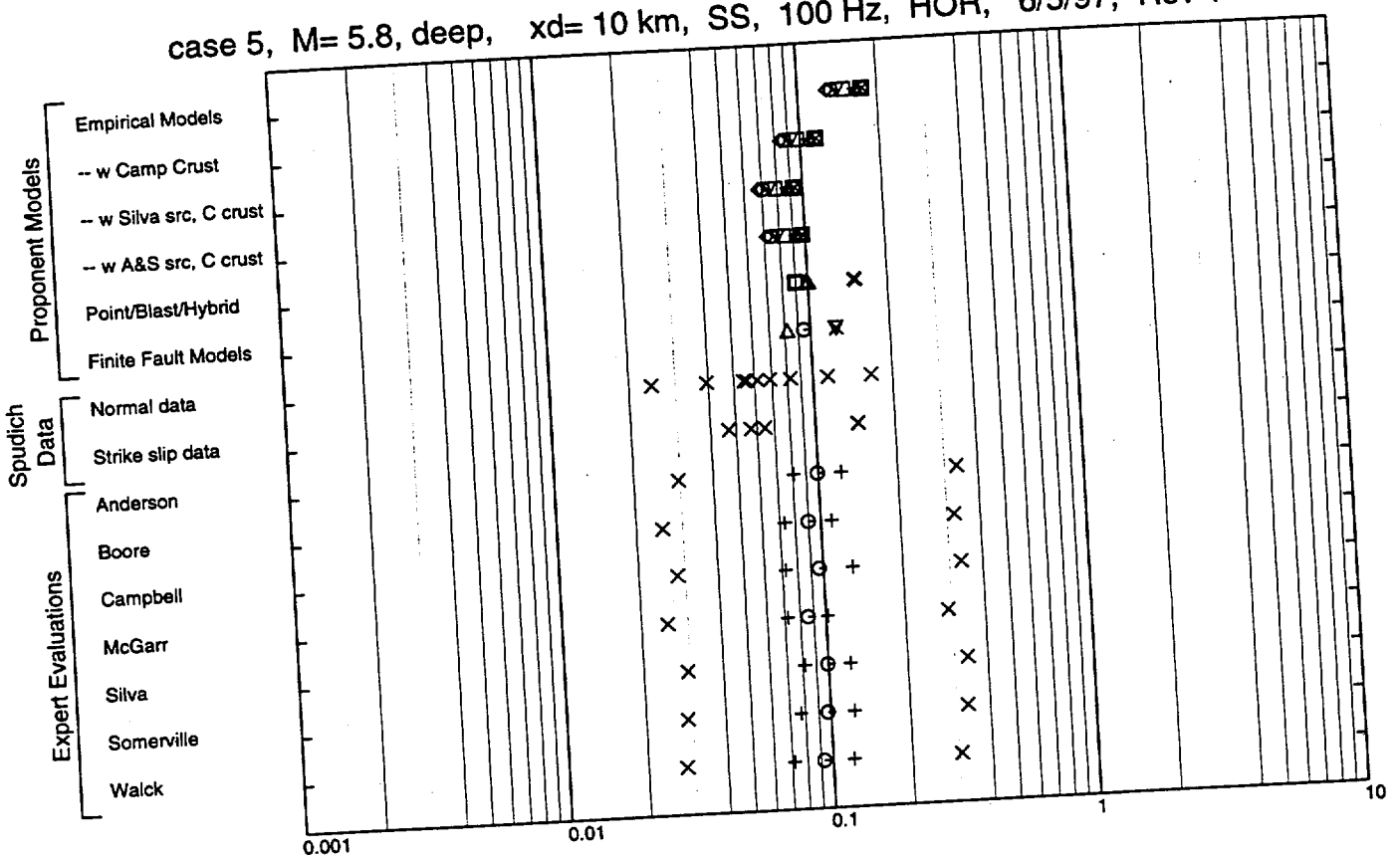


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	△	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

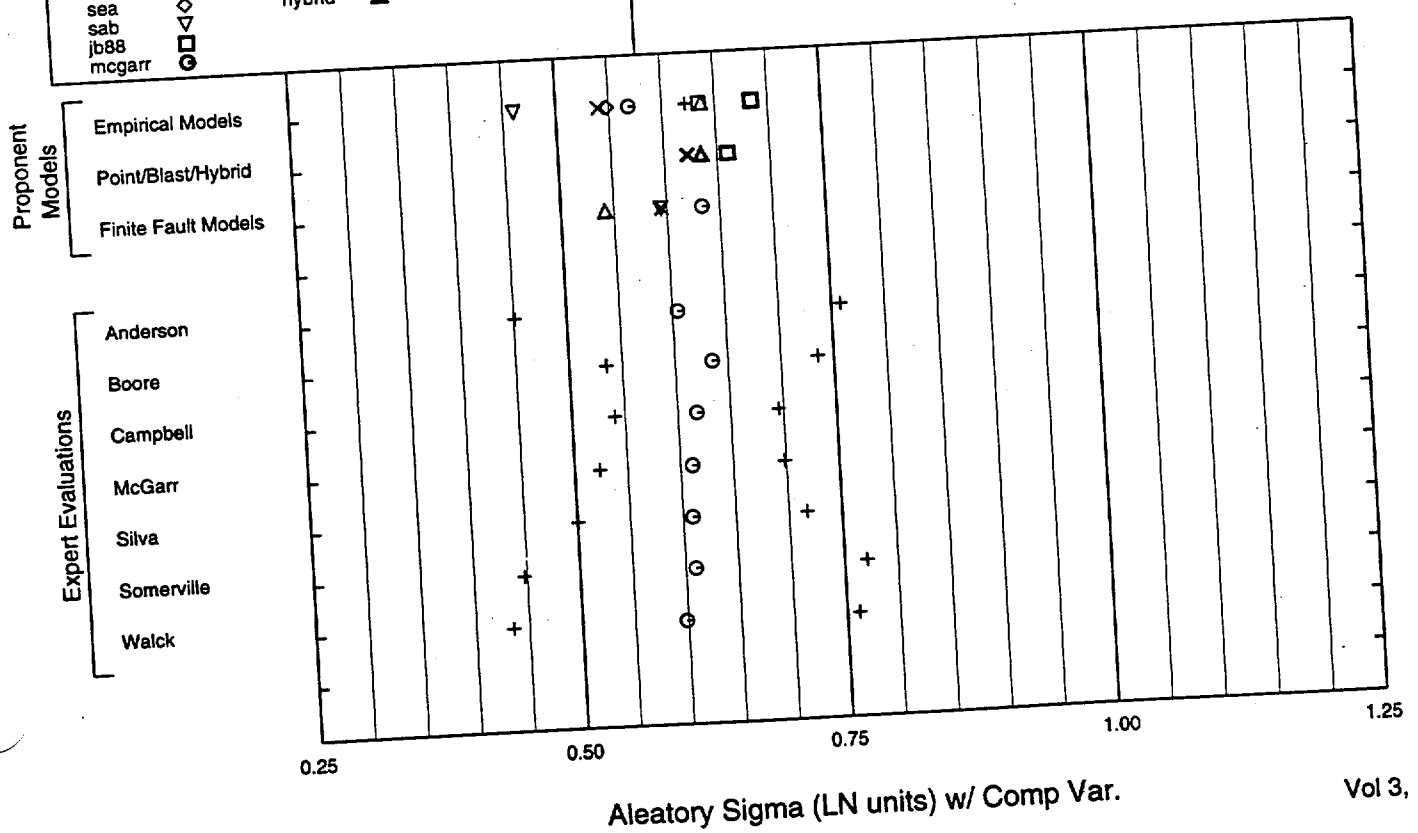


case 5, M= 5.8, deep, xd= 10 km, SS, 100 Hz, HOR, 6/5/97, Rev 1

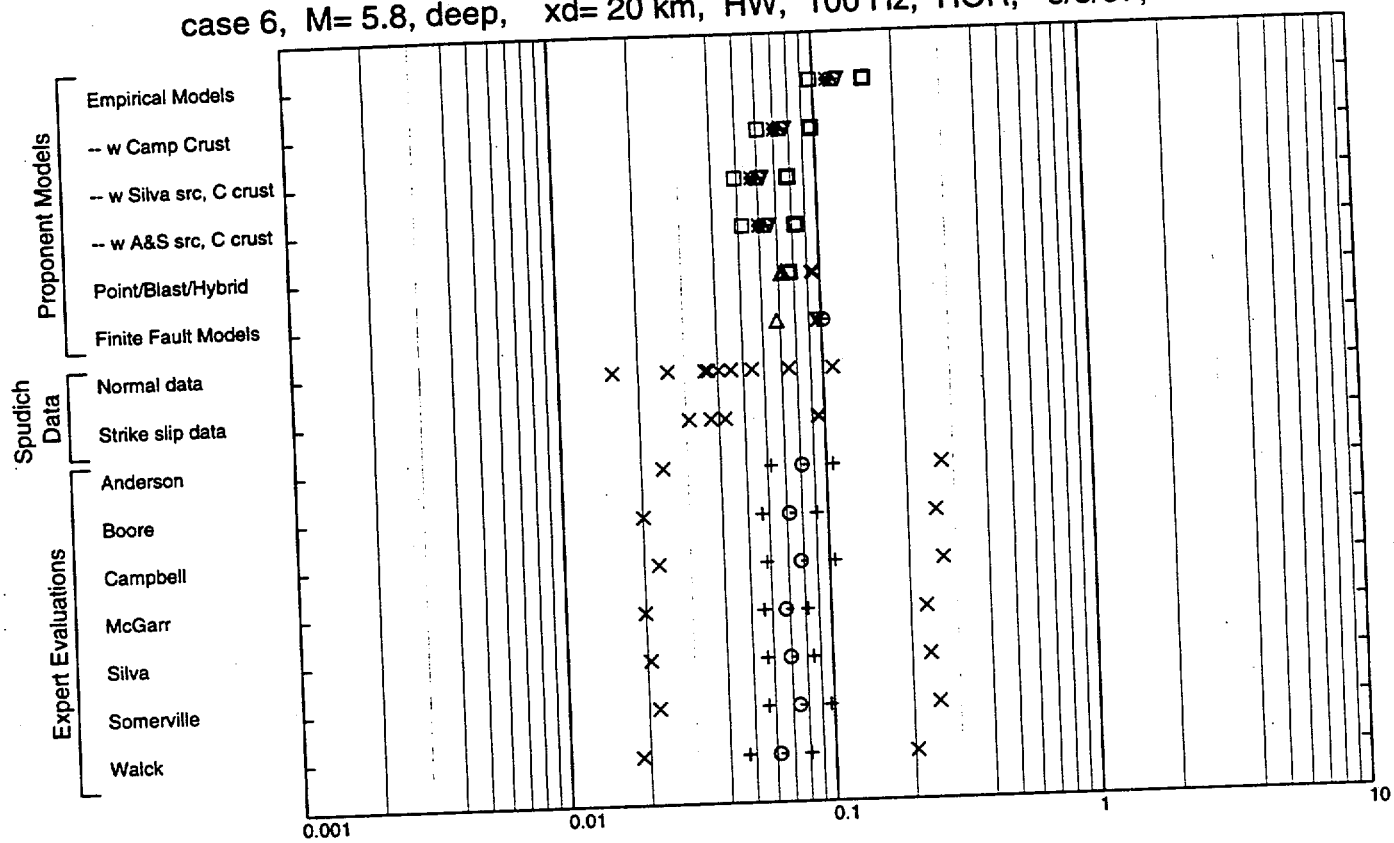


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

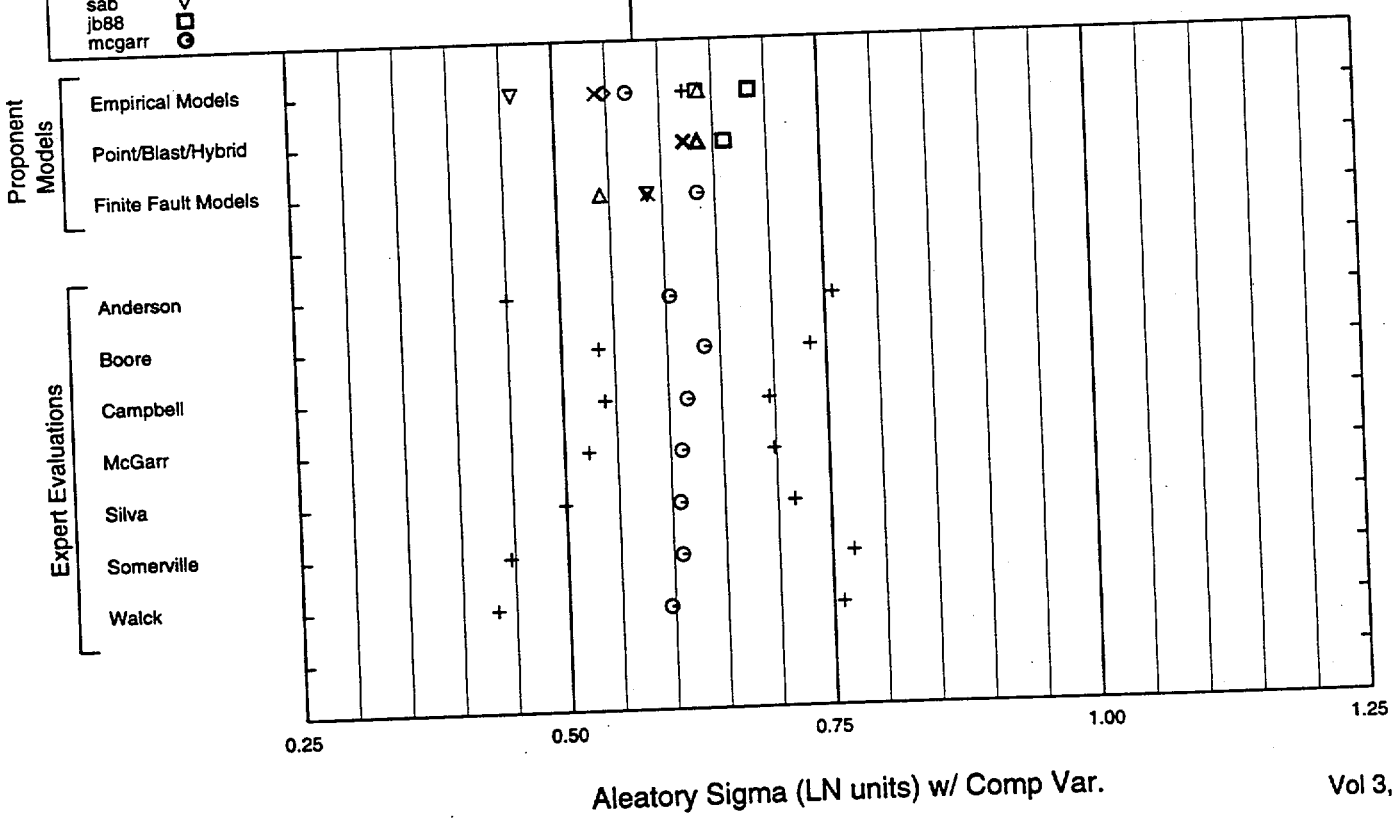


case 6, M= 5.8, deep, xd= 20 km, HW, 100 Hz, HOR, 6/5/97, Rev 1

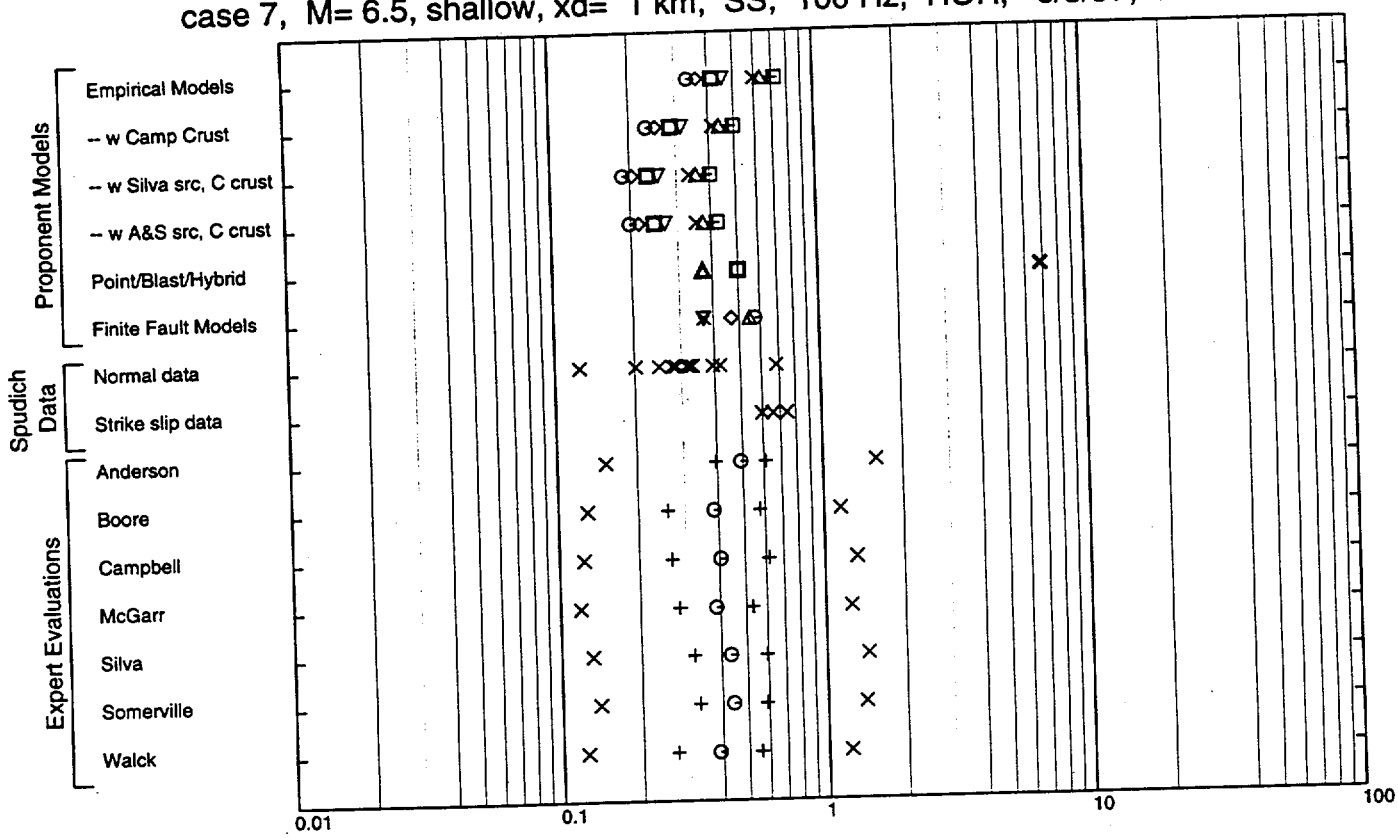


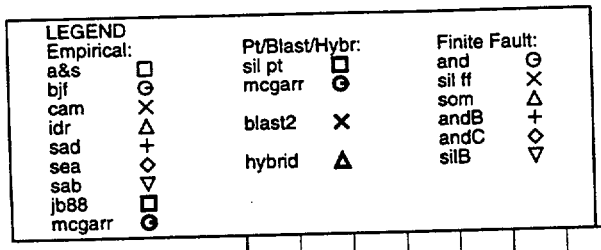
LEGEND

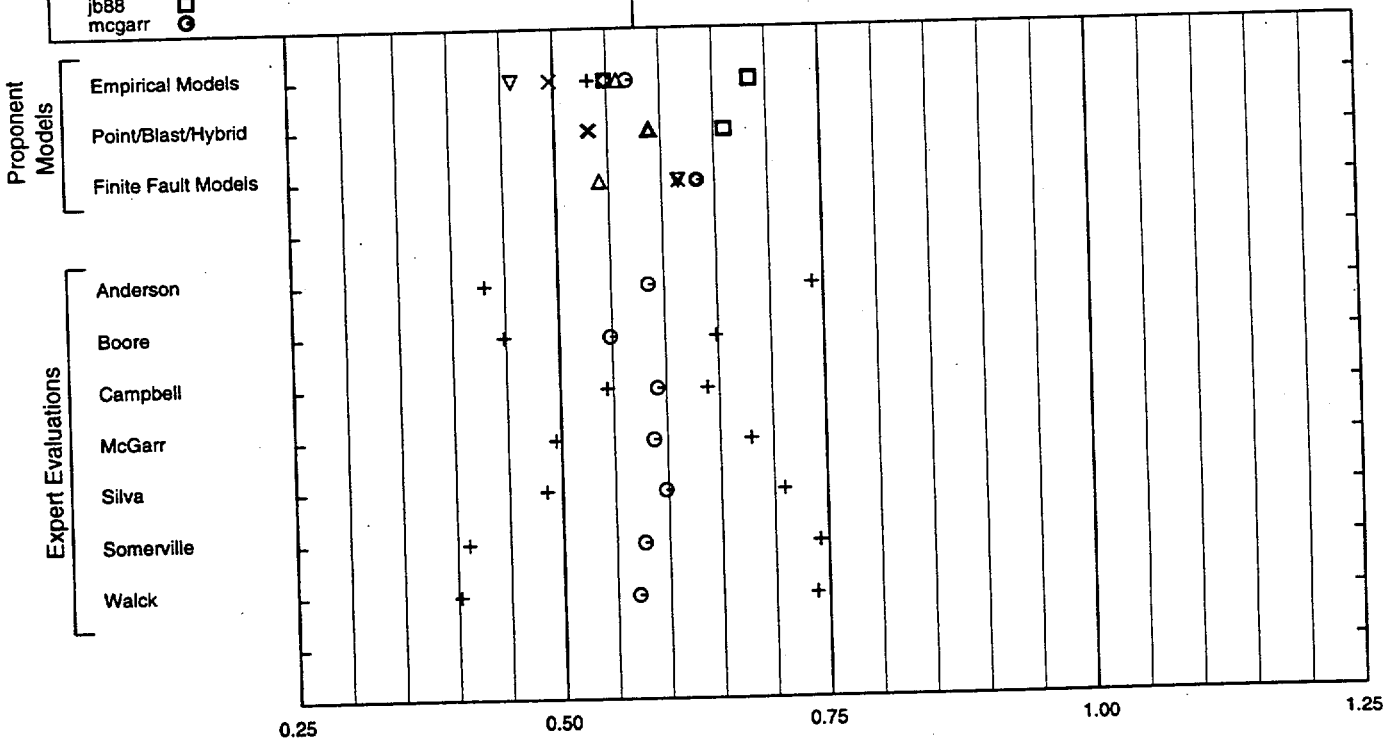
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



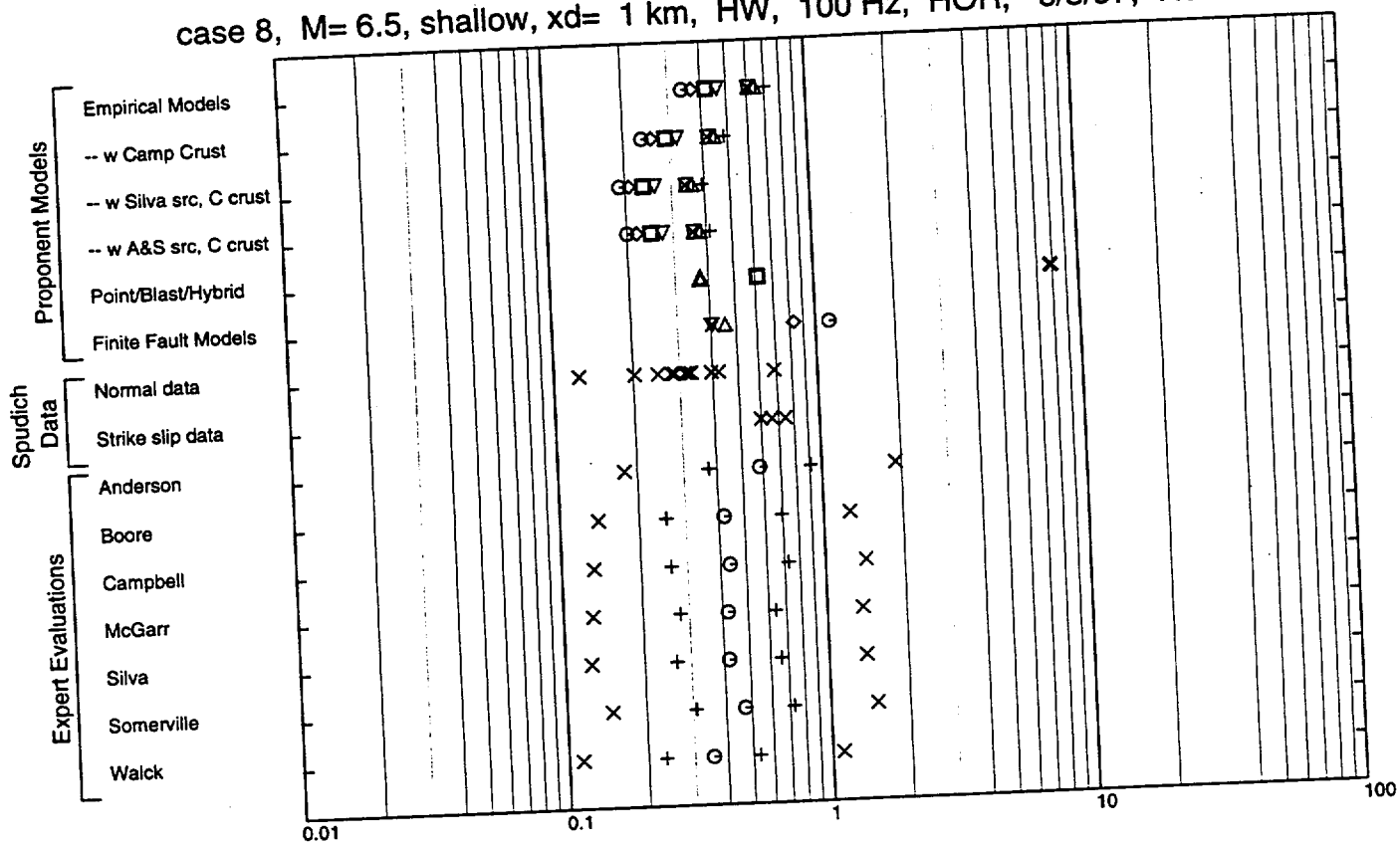
case 7, M= 6.5, shallow, xd= 1 km, SS, 100 Hz, HOR, 6/5/97, Rev 1





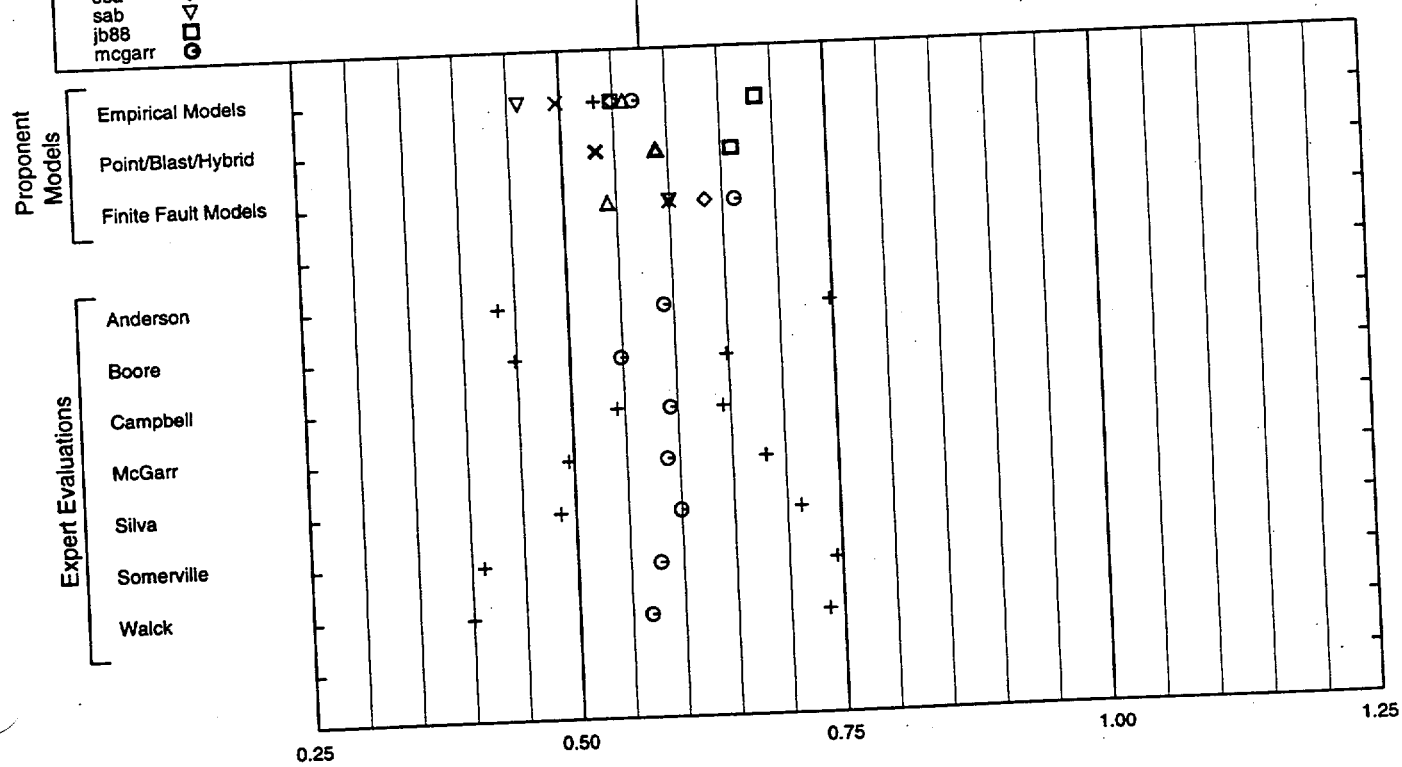


case 8, M= 6.5, shallow, xd= 1 km, HW, 100 Hz, HOR, 6/5/97, Rev 1

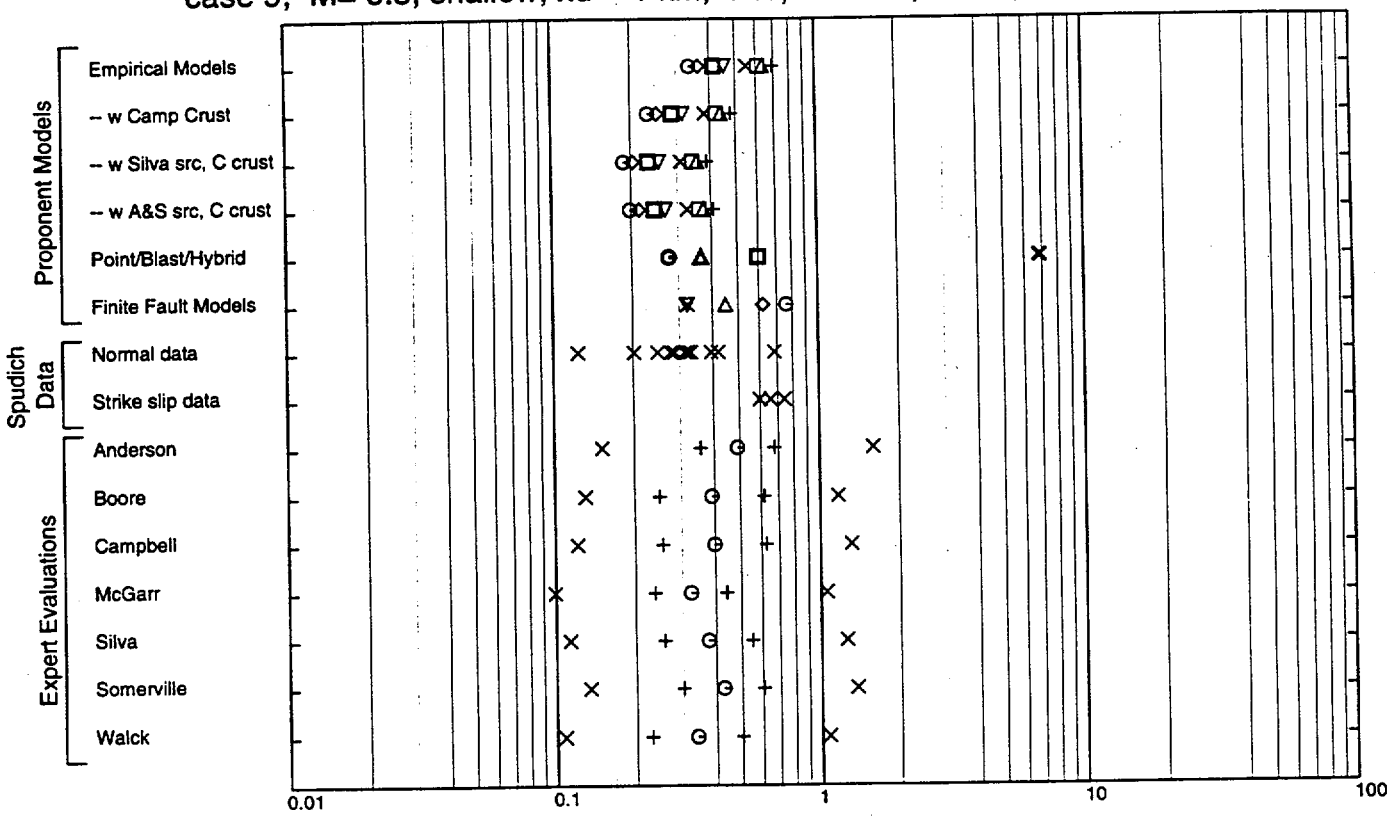


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



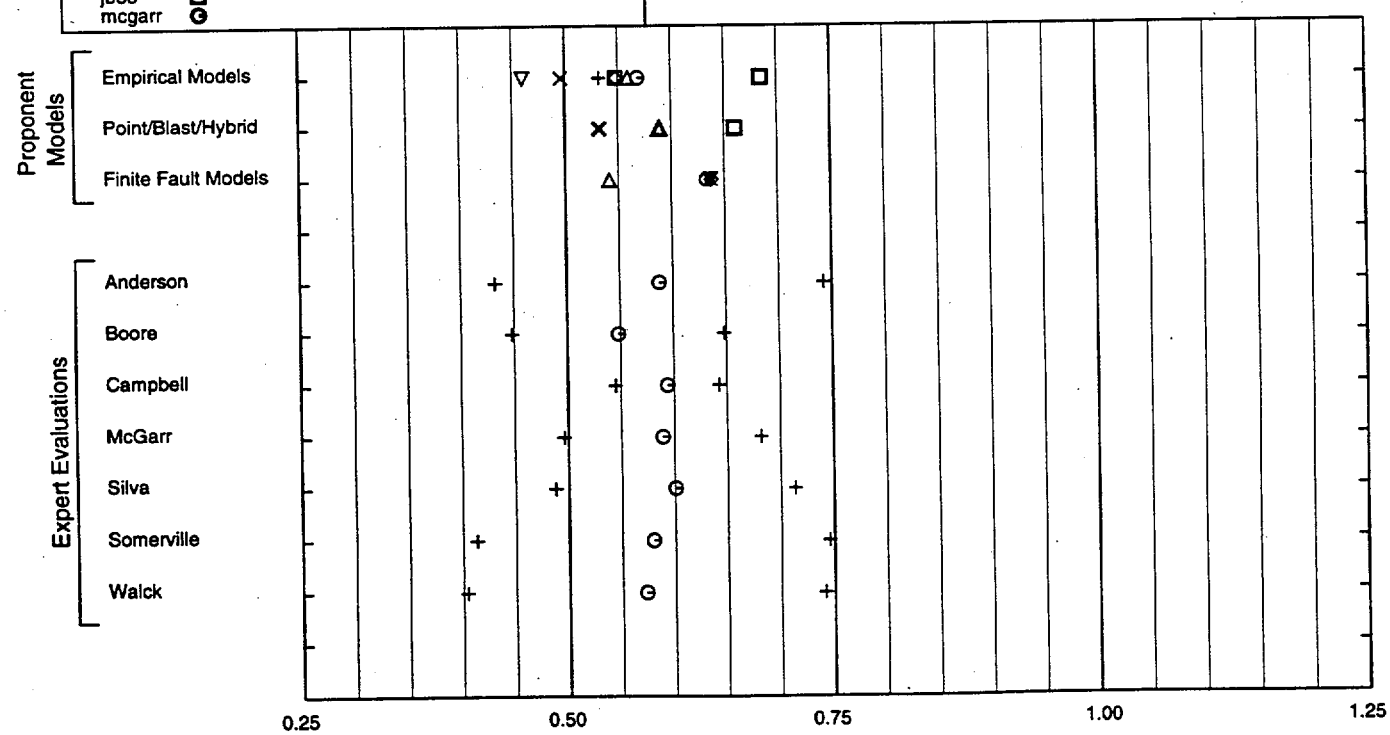
case 9, M= 6.5, shallow, xd= -1 km, FW, 100 Hz, HOR, 6/5/97, Rev 1



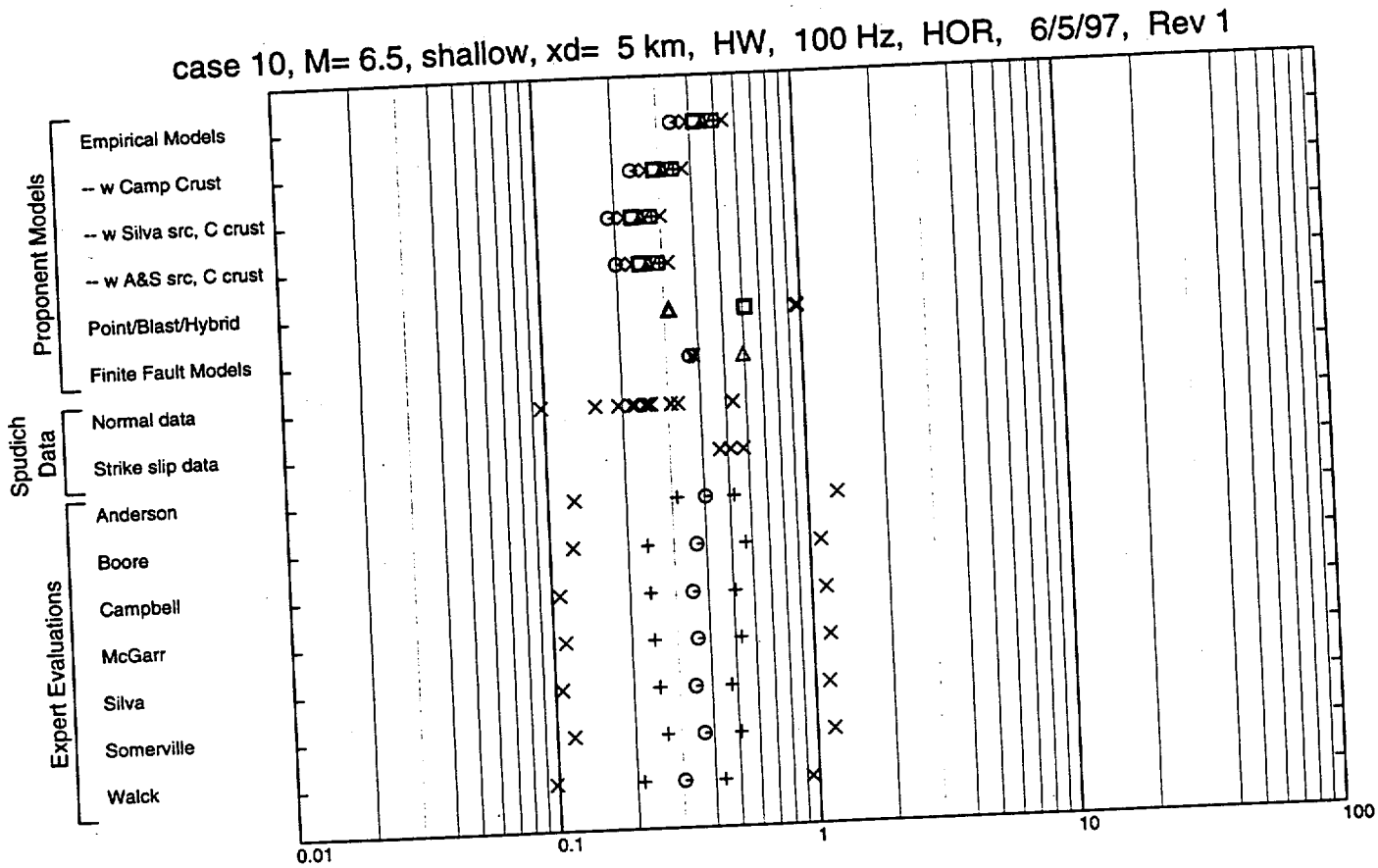
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

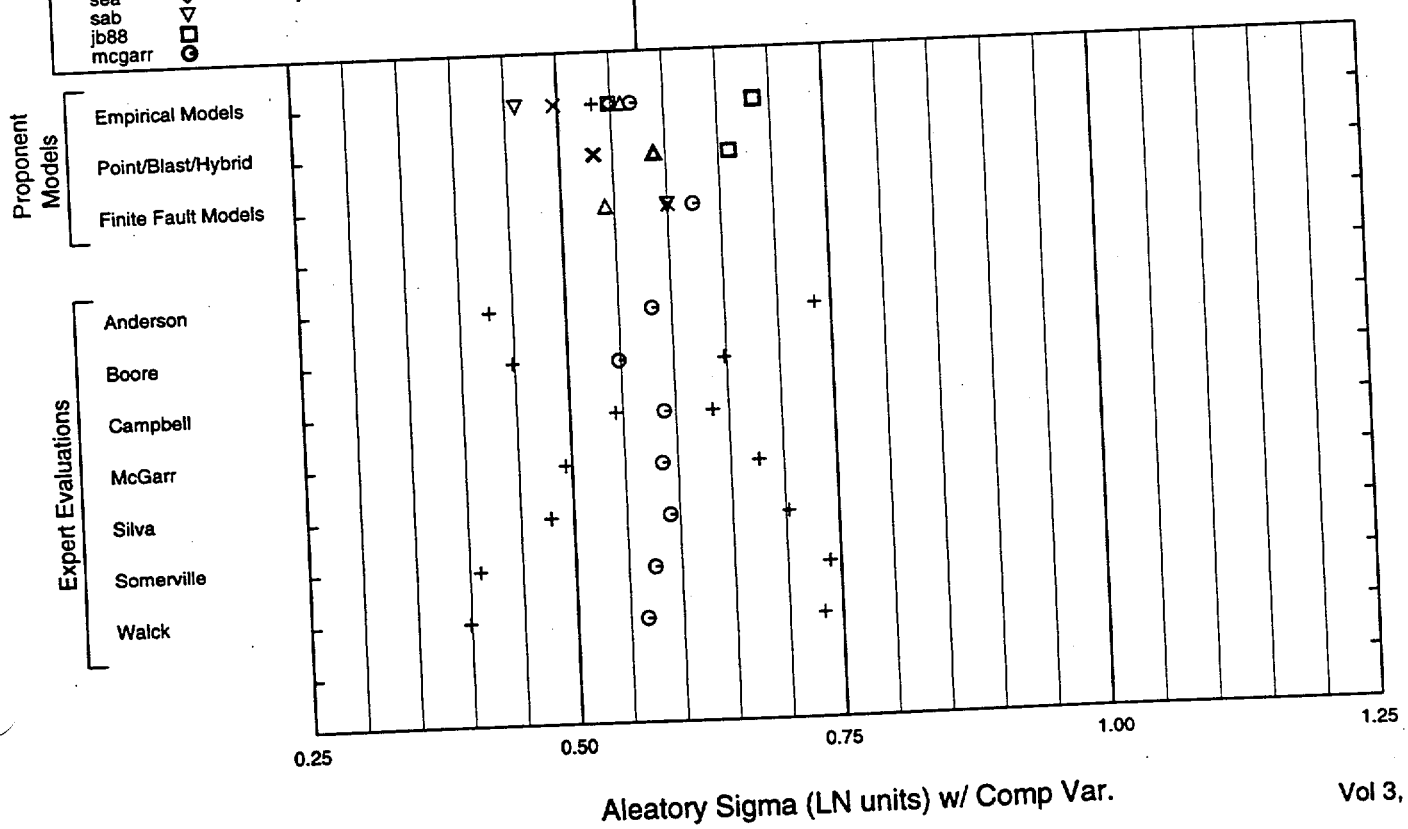


Aleatory Sigma (LN units) w/ Comp Var.

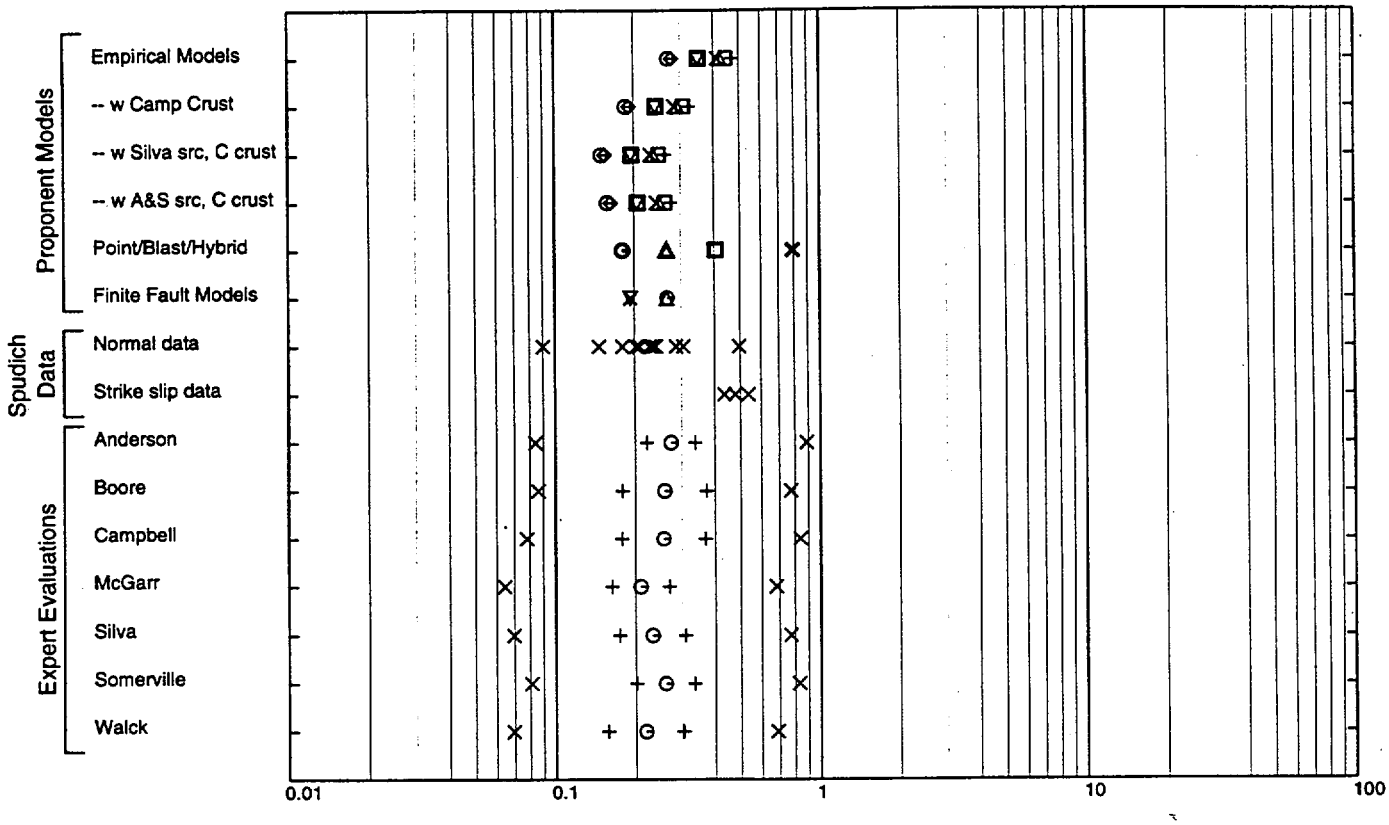


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



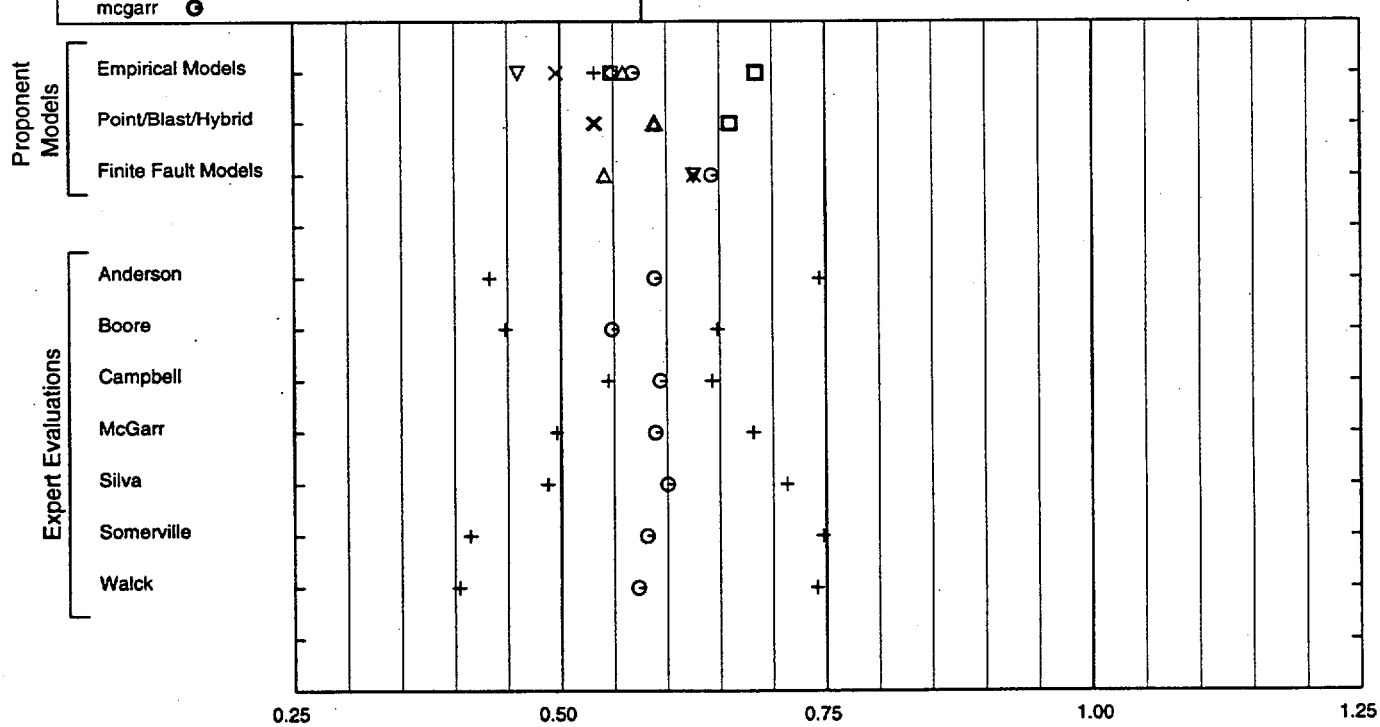
case 11, M= 6.5, shallow, xd= -5 km, FW, 100 Hz, HOR, 6/5/97, Rev 1



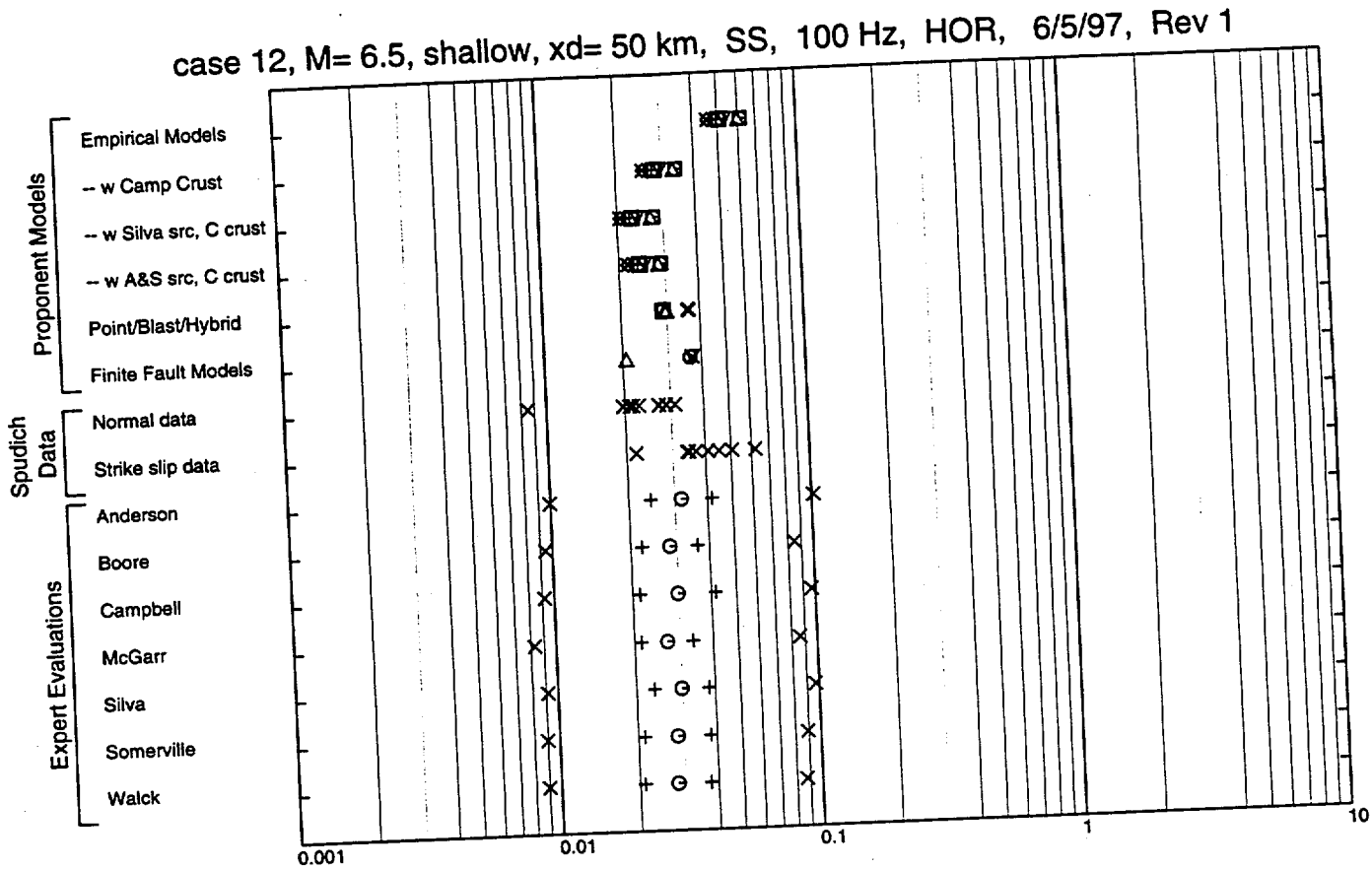
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

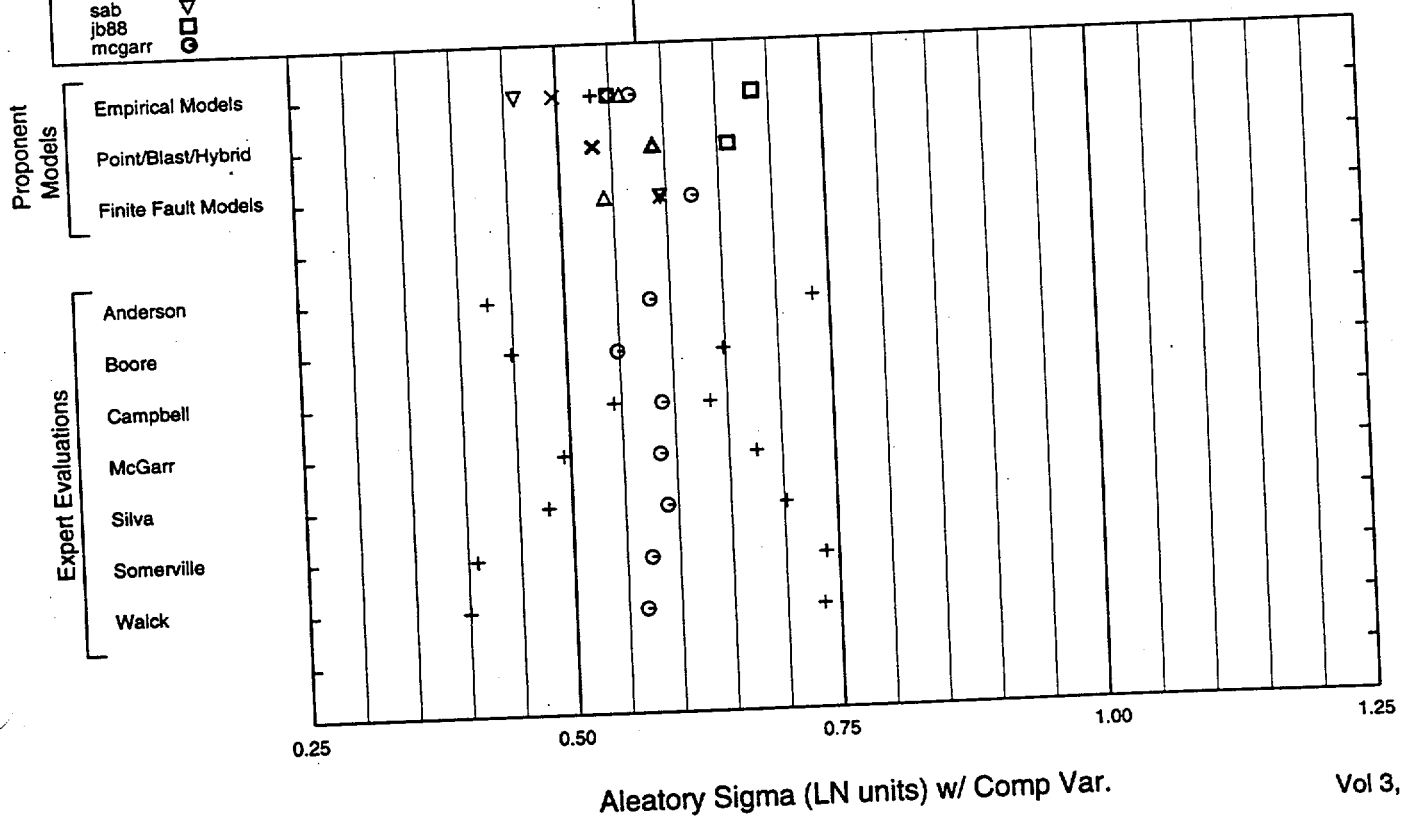


Aleatory Sigma (LN units) w/ Comp Var.

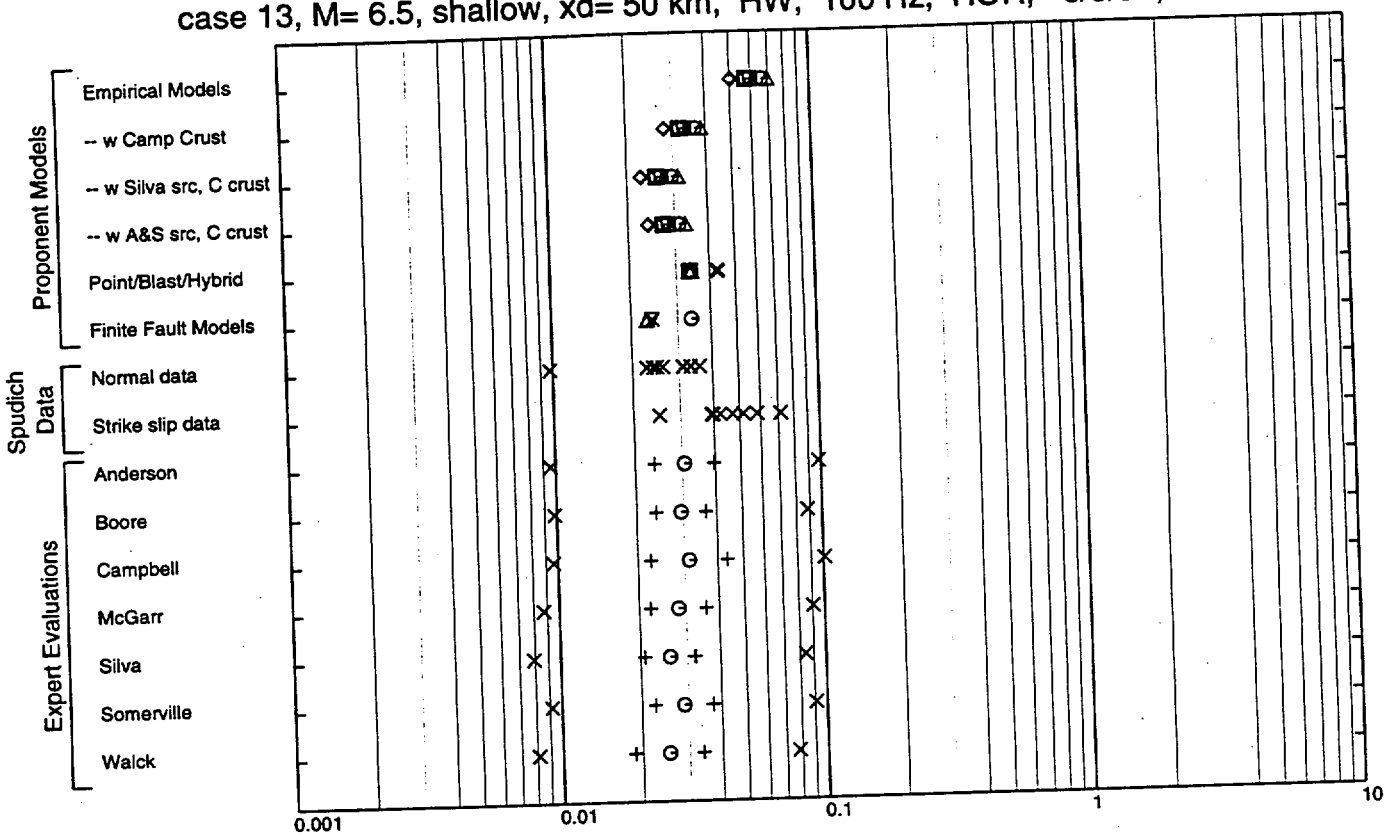


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



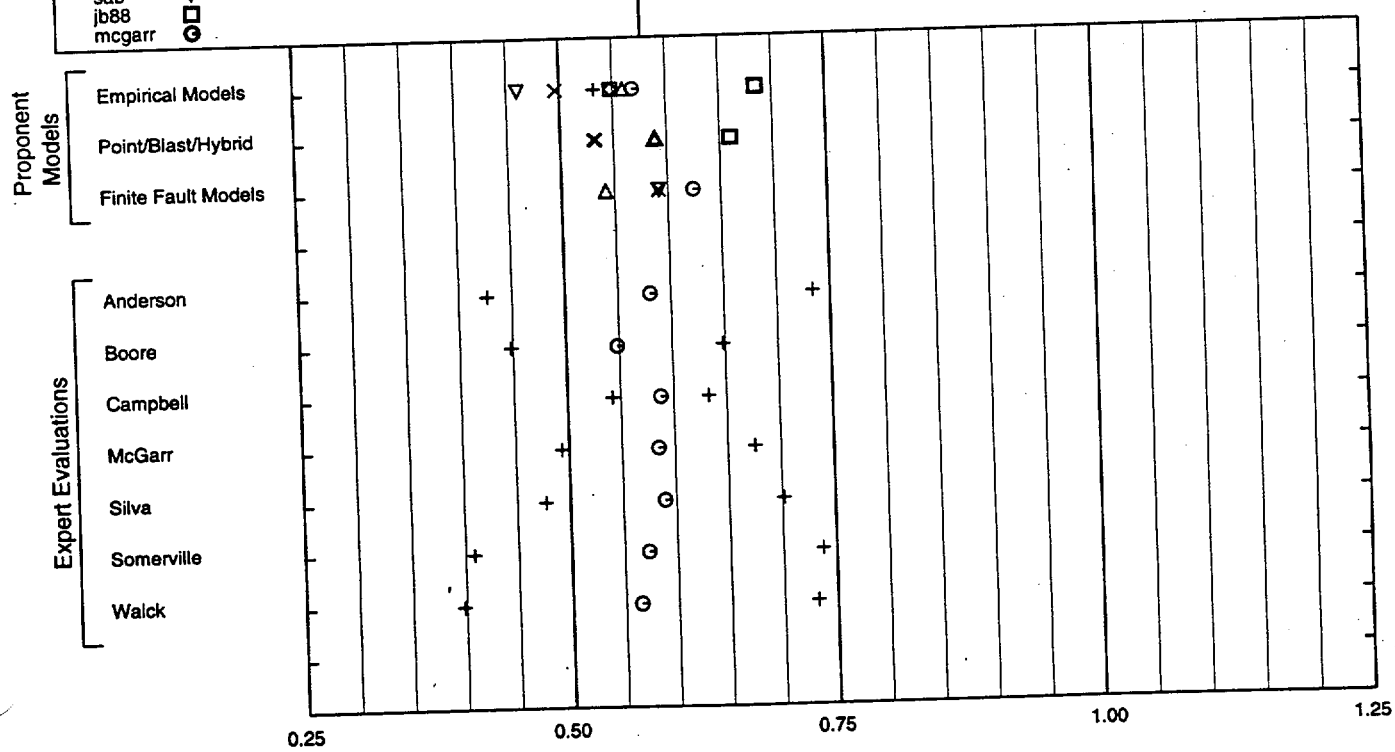
case 13, M= 6.5, shallow, xd= 50 km, HW, 100 Hz, HOR, 6/5/97, Rev 1



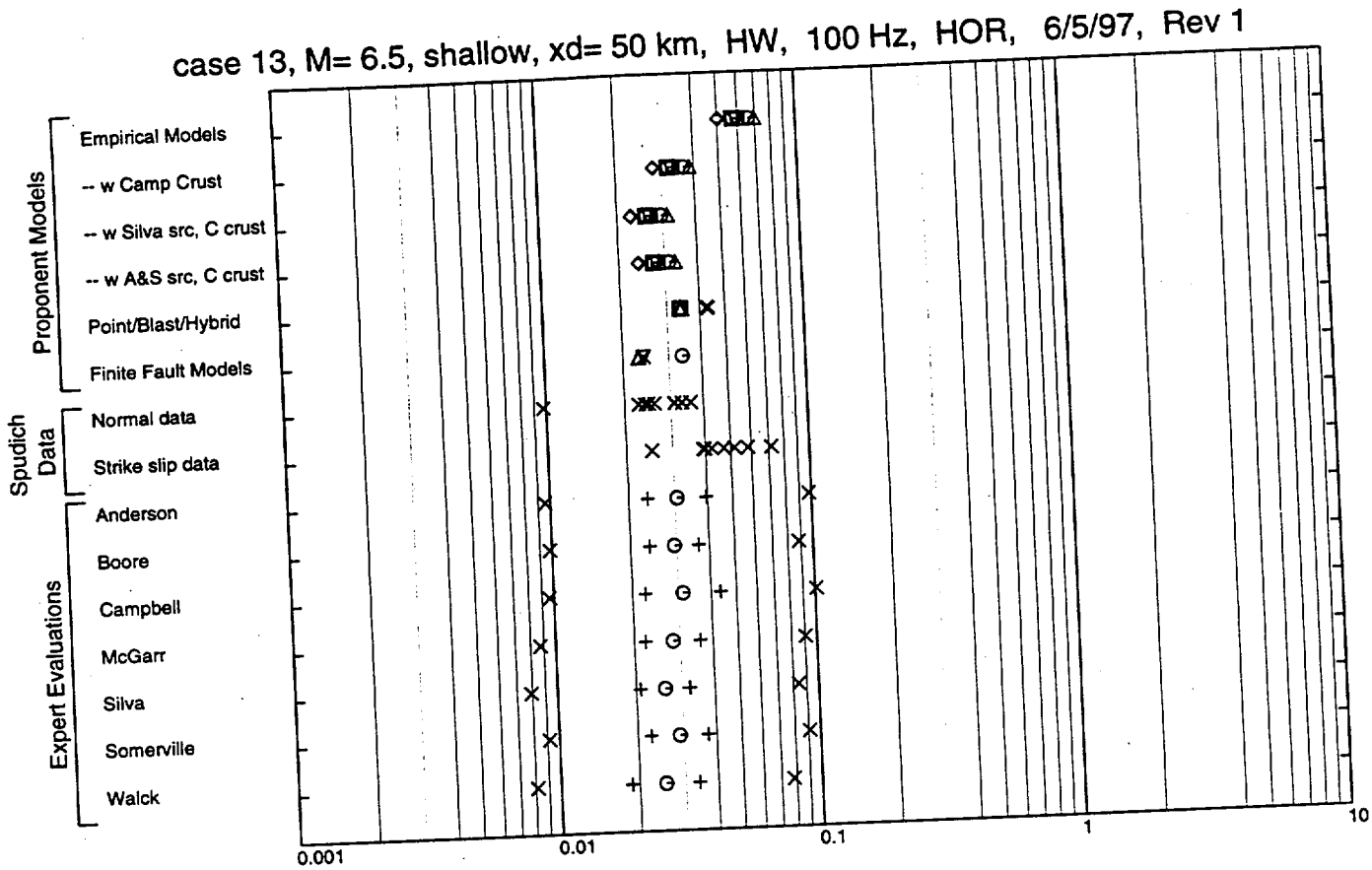
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

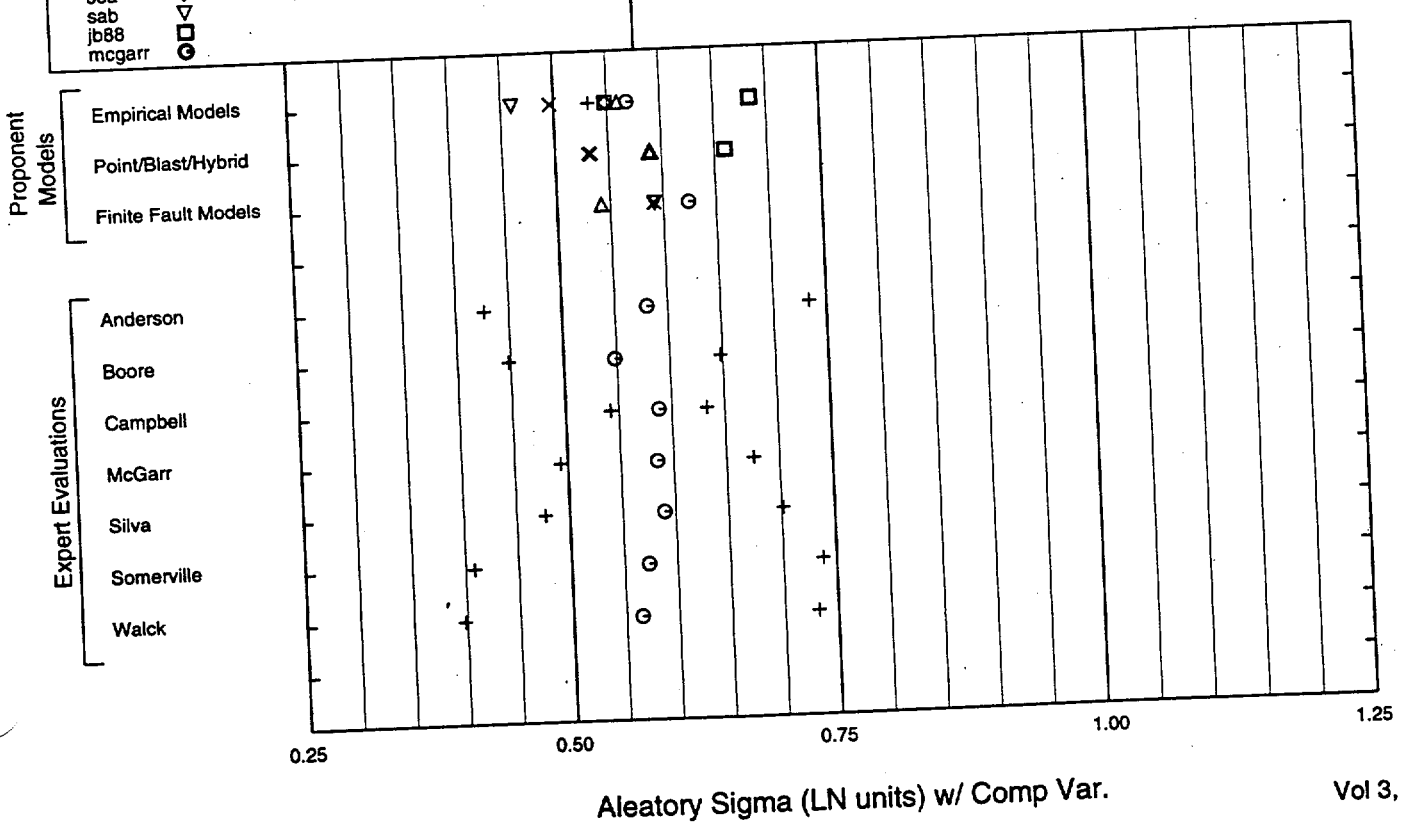


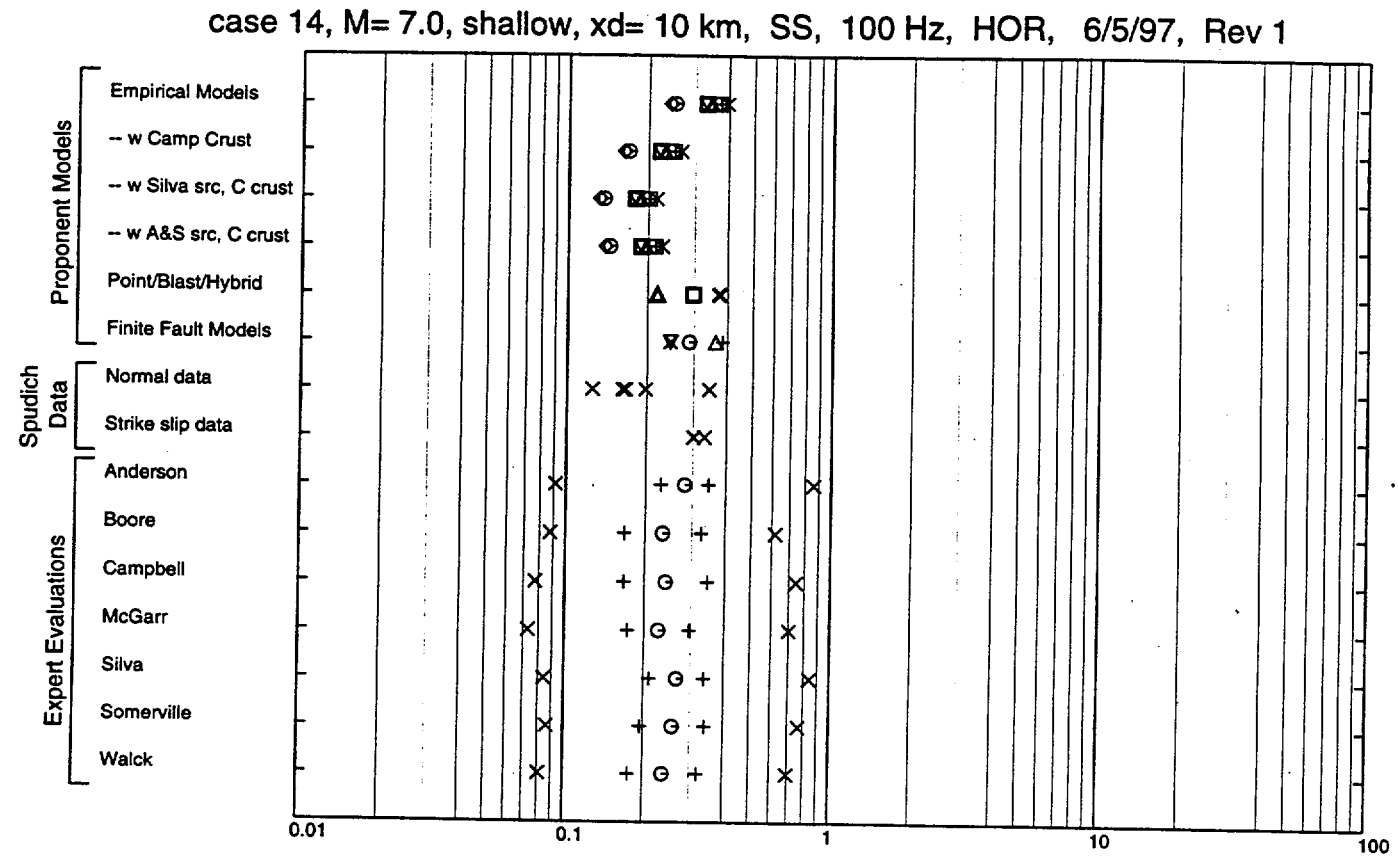
Aleatory Sigma (LN units) w/ Comp Var.



LEGEND

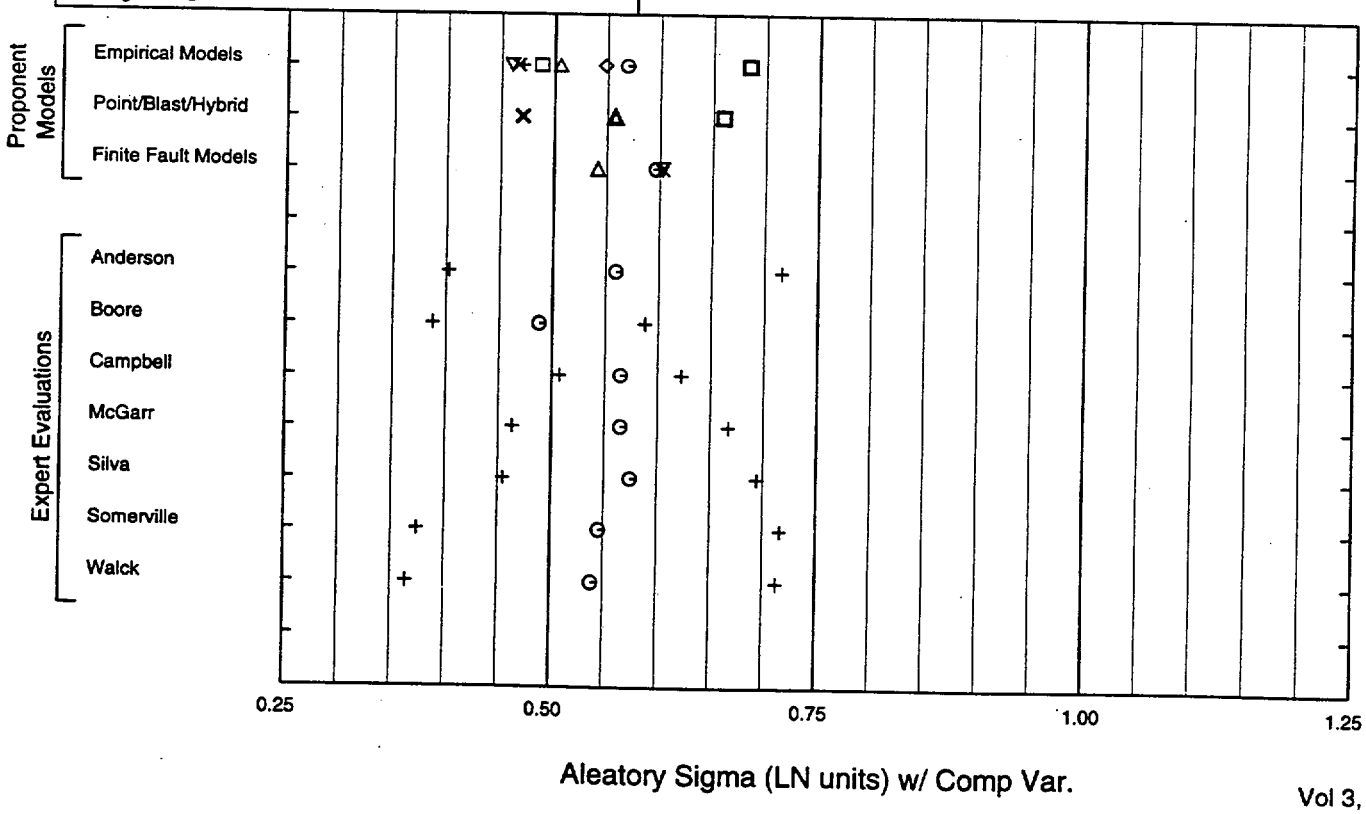
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



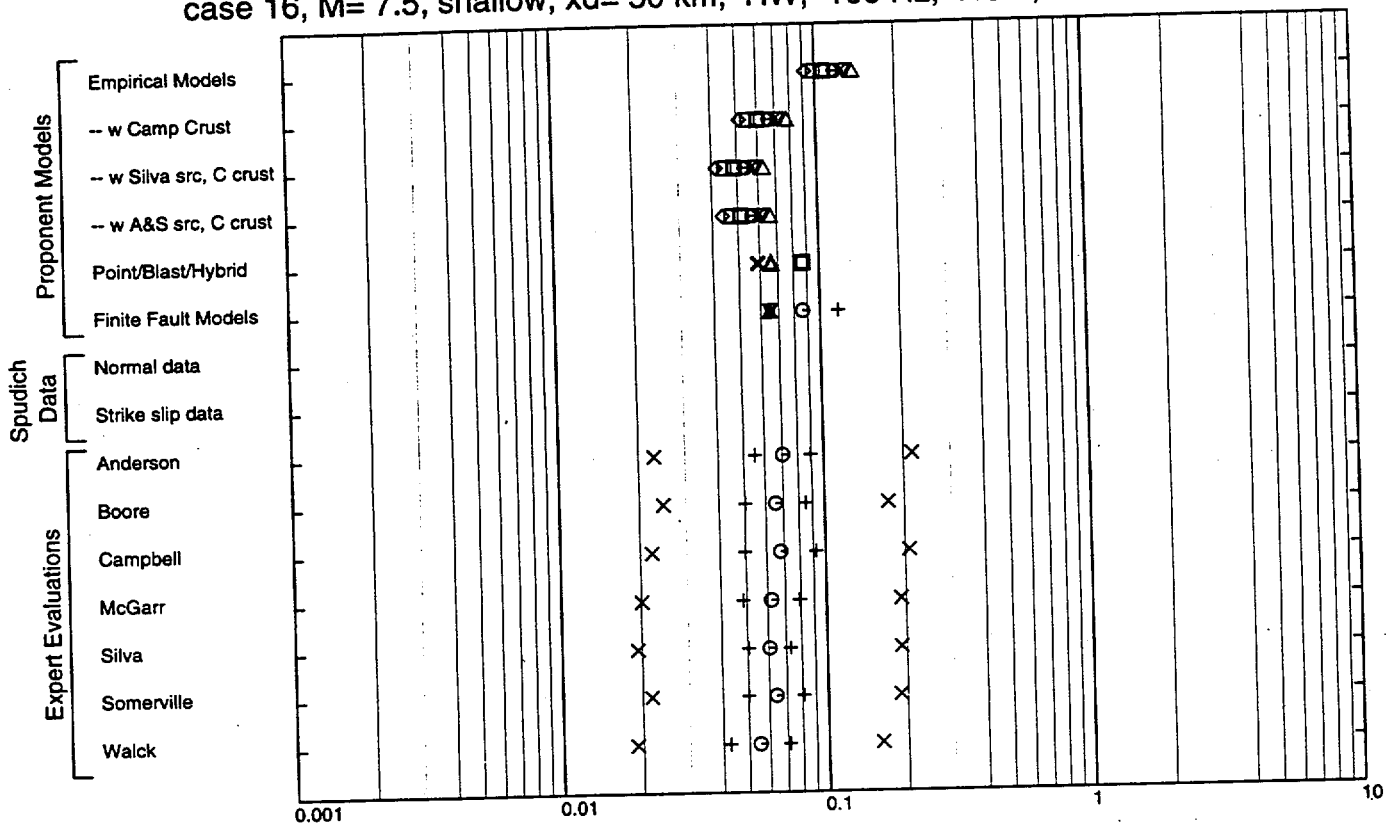


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



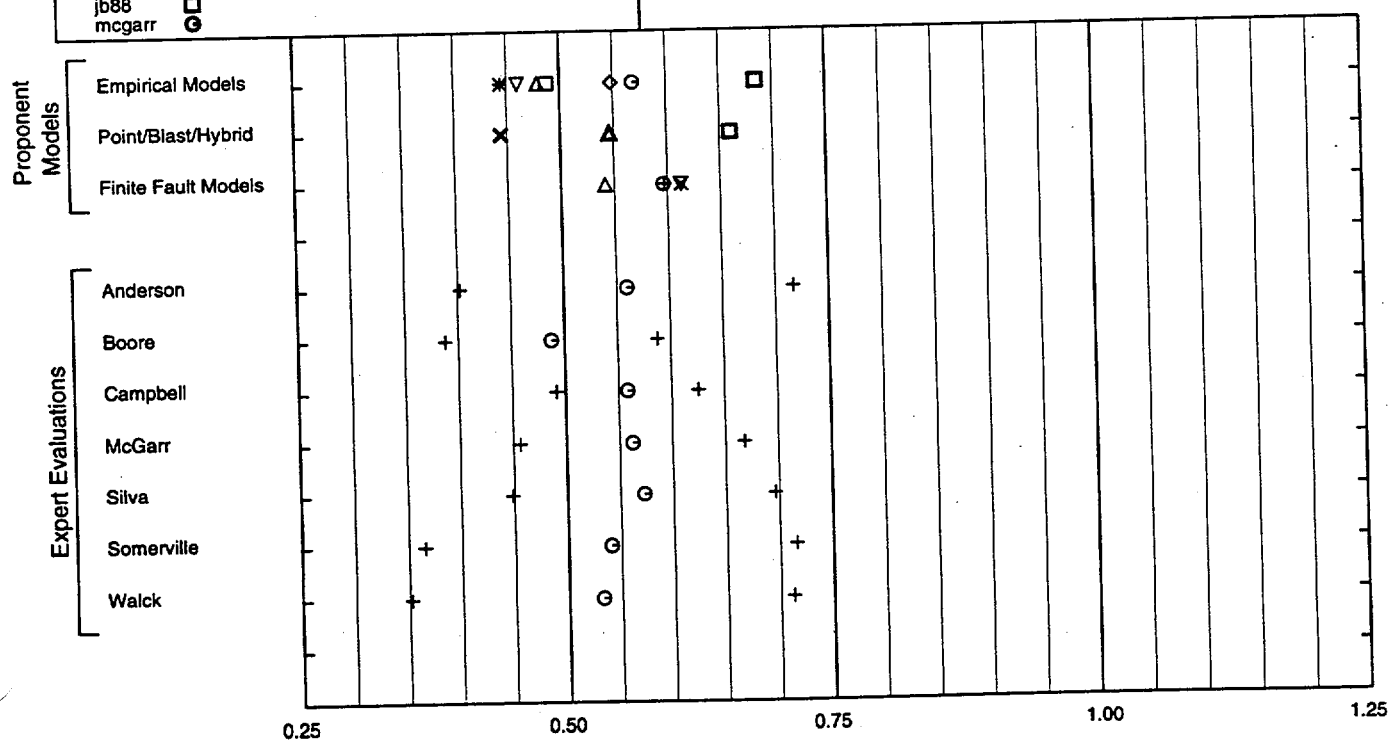
case 16, M= 7.5, shallow, xd= 50 km, HW, 100 Hz, HOR, 6/5/97, Rev 1



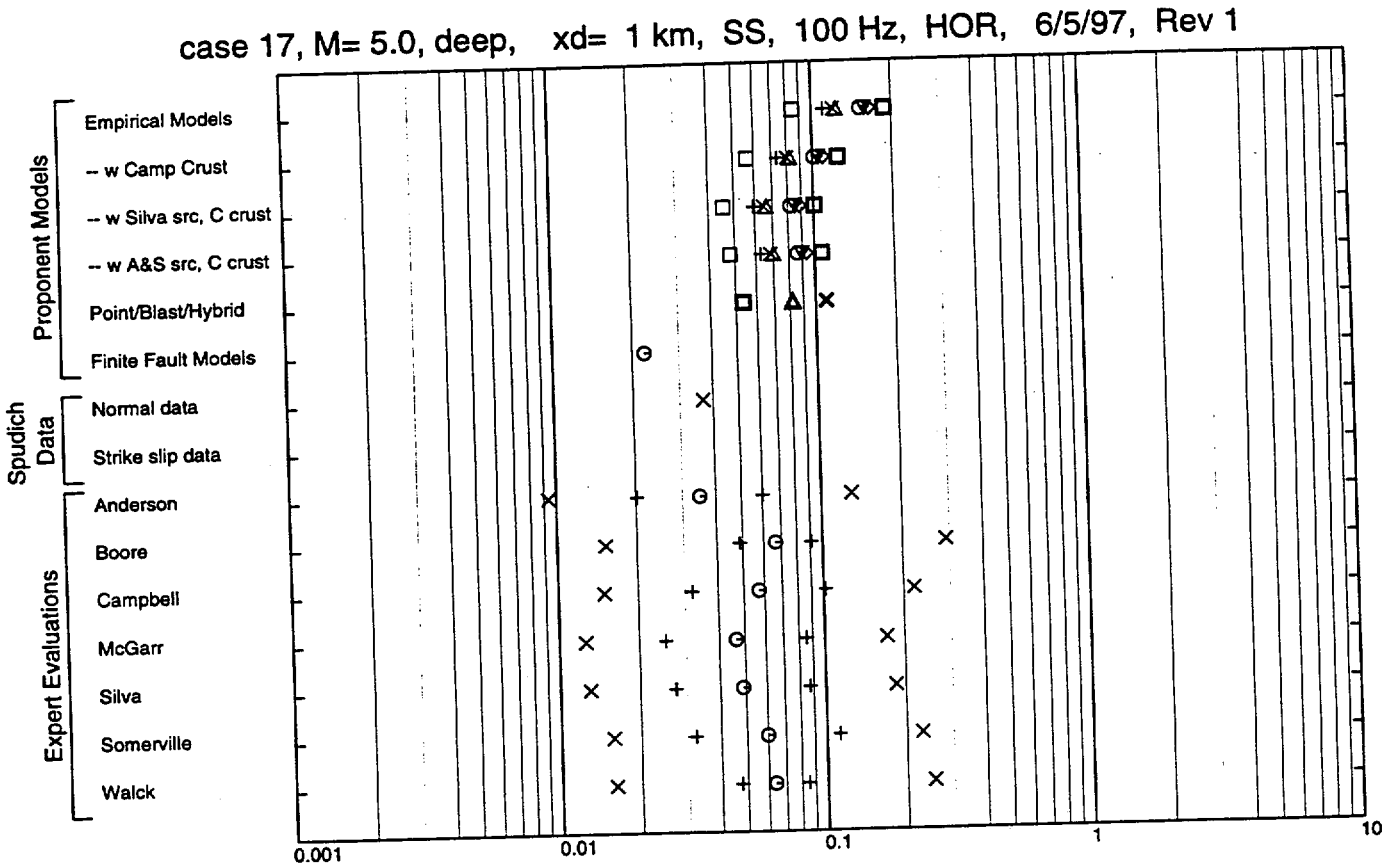
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

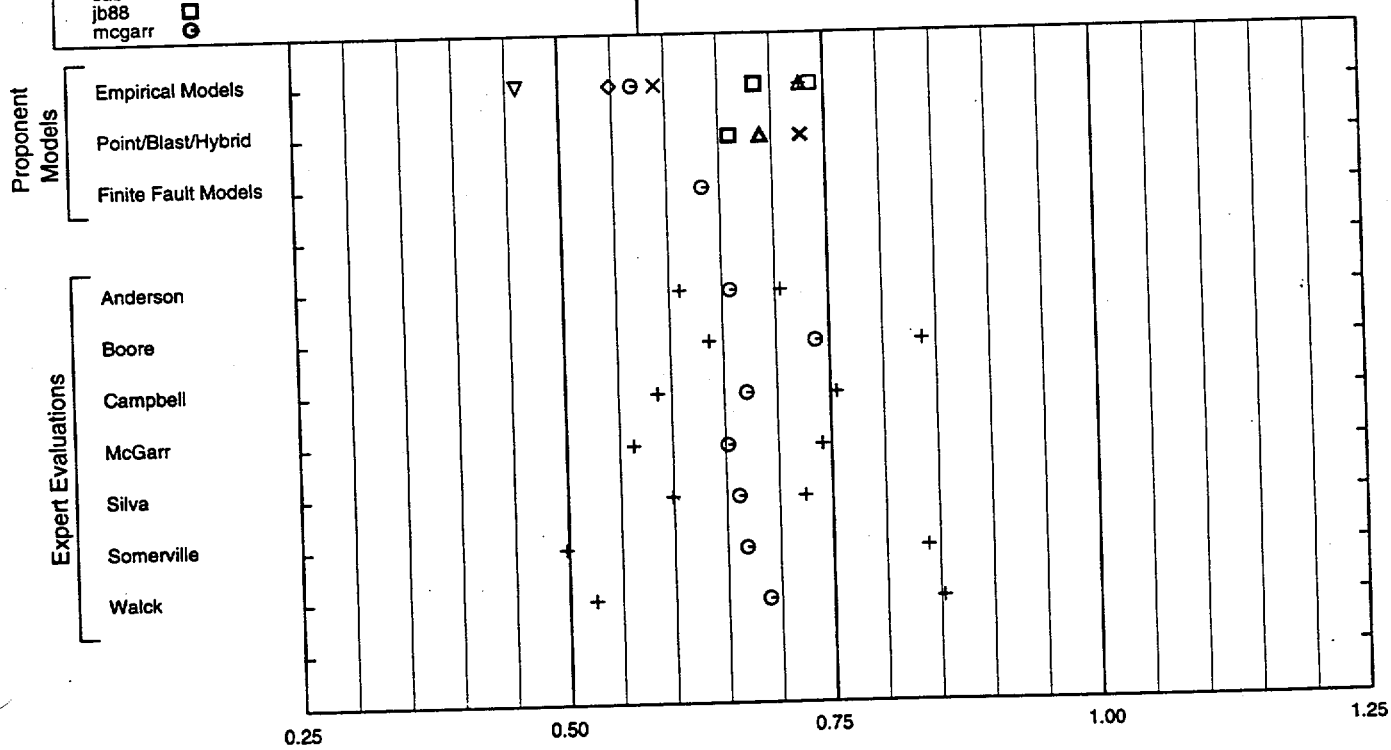


Aleatory Sigma (LN units) w/ Comp Var.

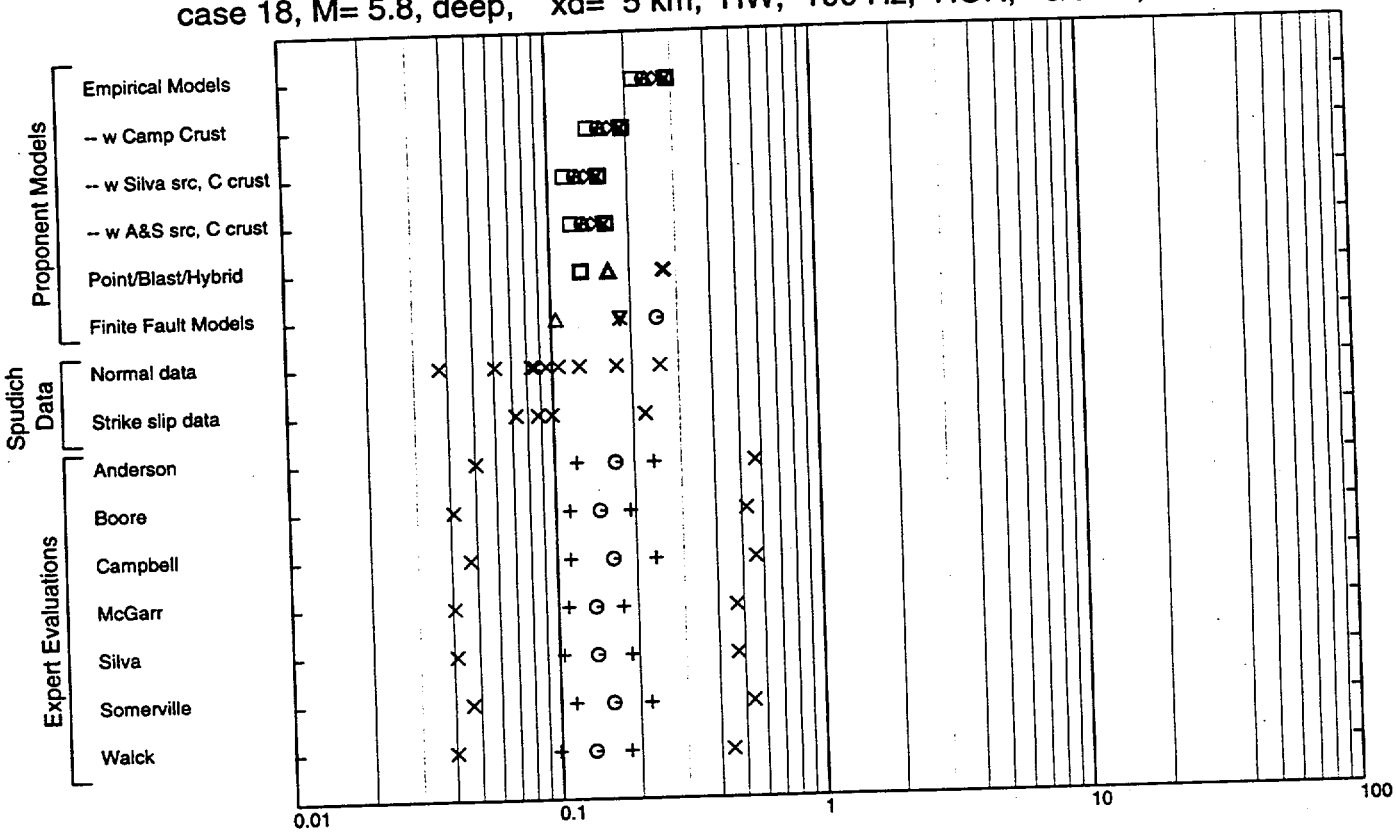


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



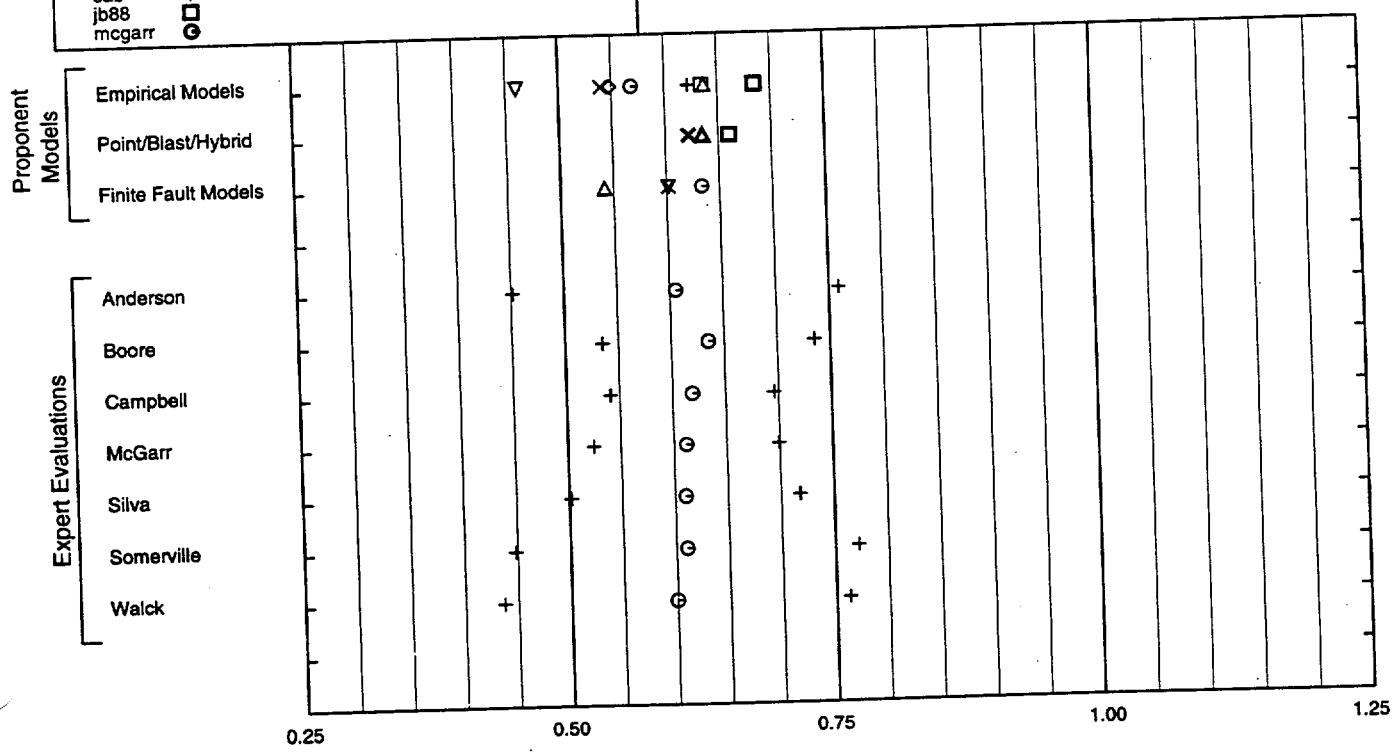
case 18, M= 5.8, deep, xd= 5 km, HW, 100 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

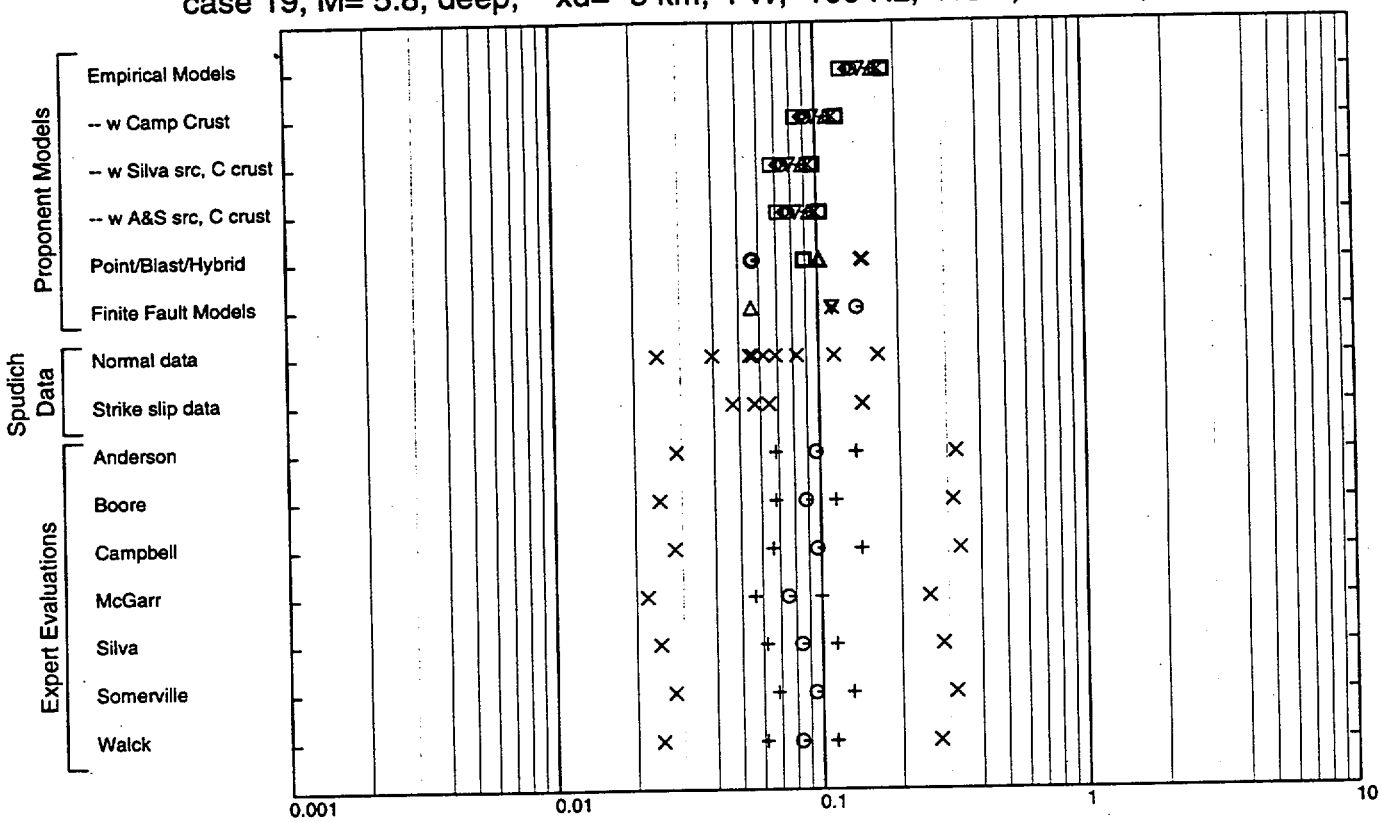
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

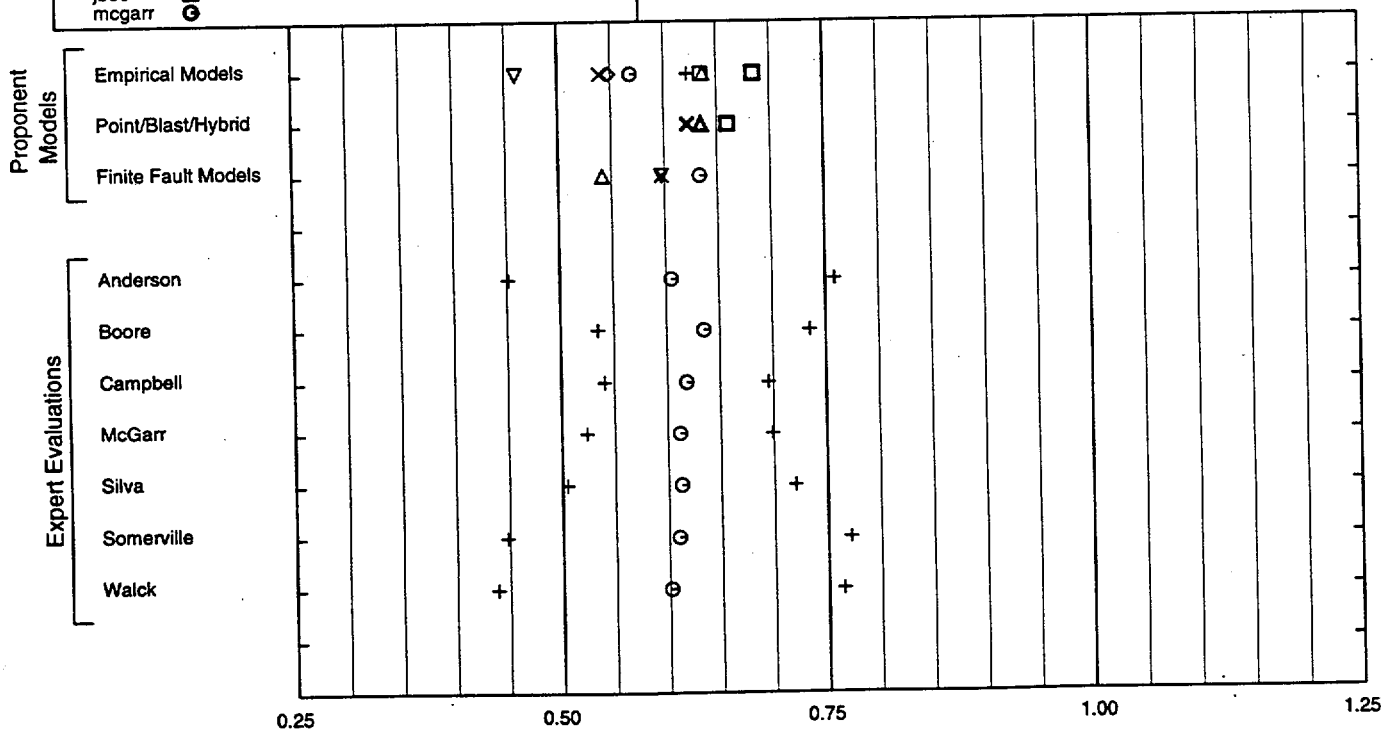
case 19, M= 5.8, deep, xd= -5 km, FW, 100 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

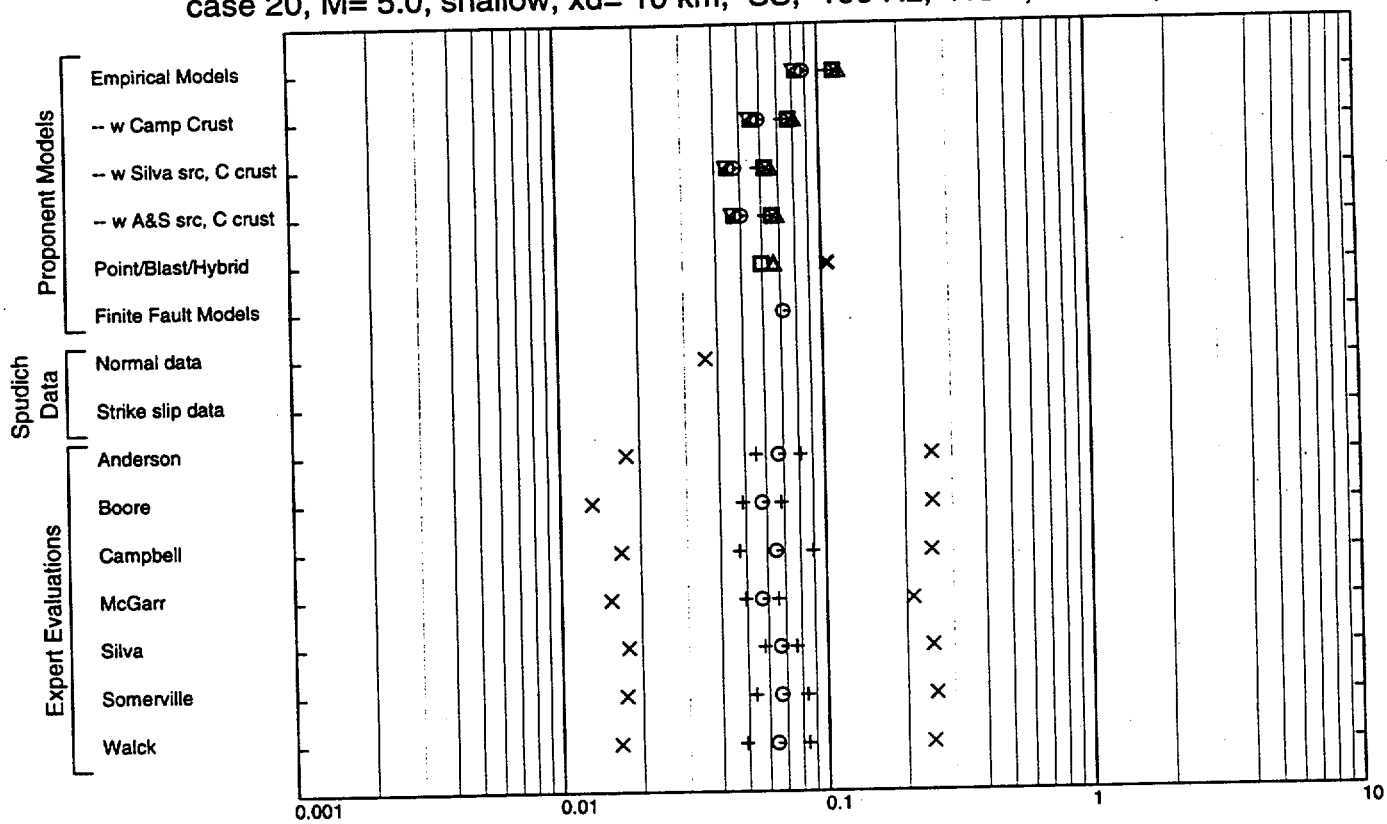
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



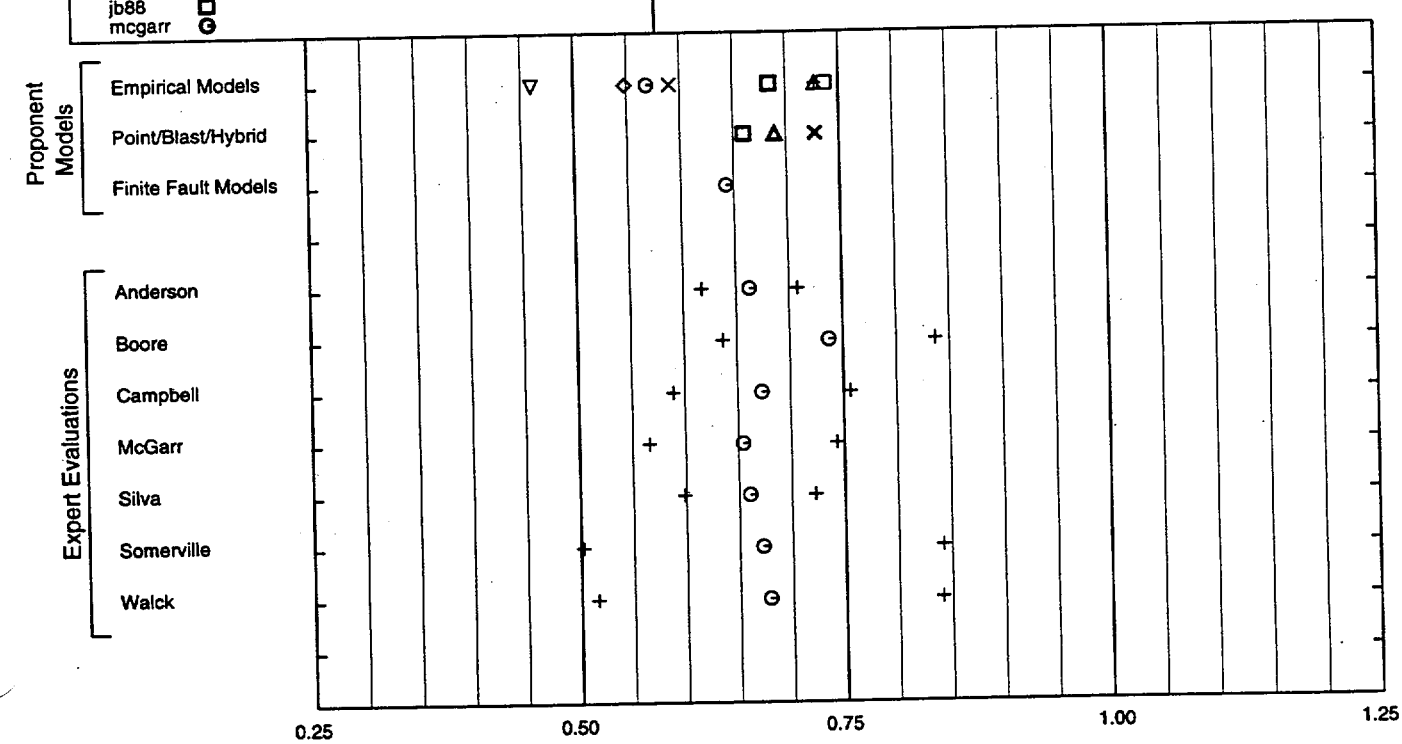
Aleatory Sigma (LN units) w/ Comp Var.

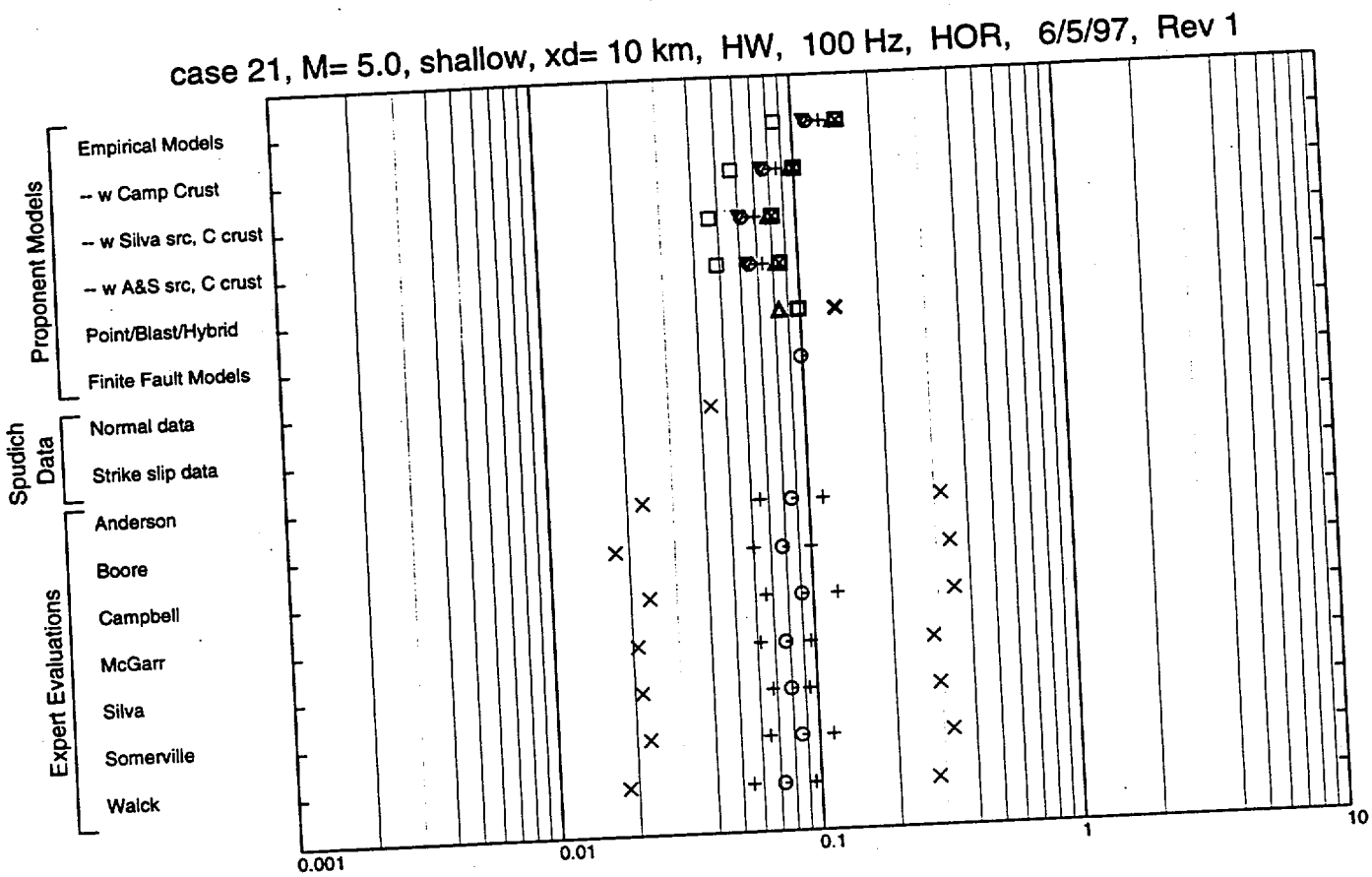
case 20, M= 5.0, shallow, xd= 10 km, SS, 100 Hz, HOR, 6/5/97, Rev 1

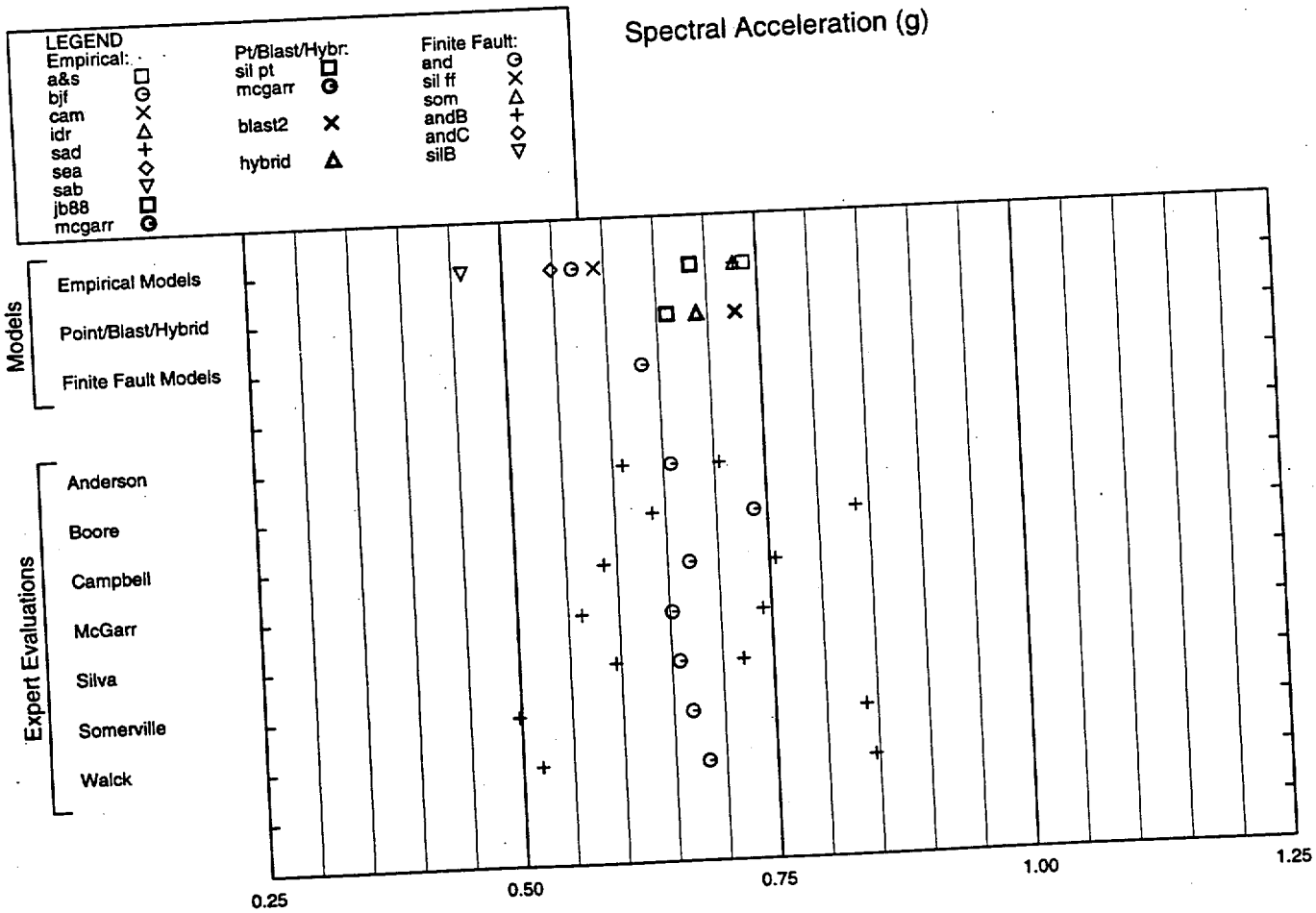


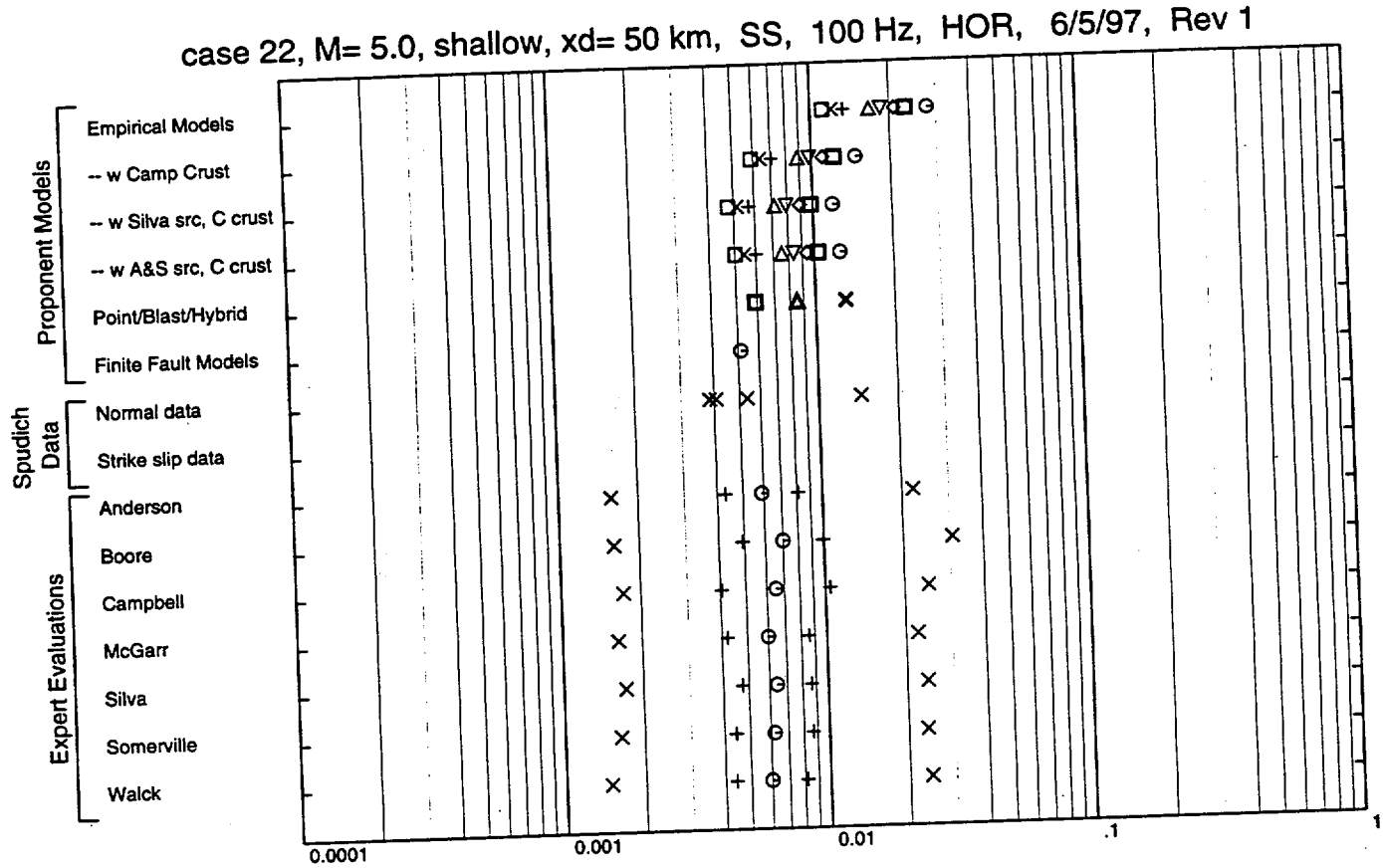
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



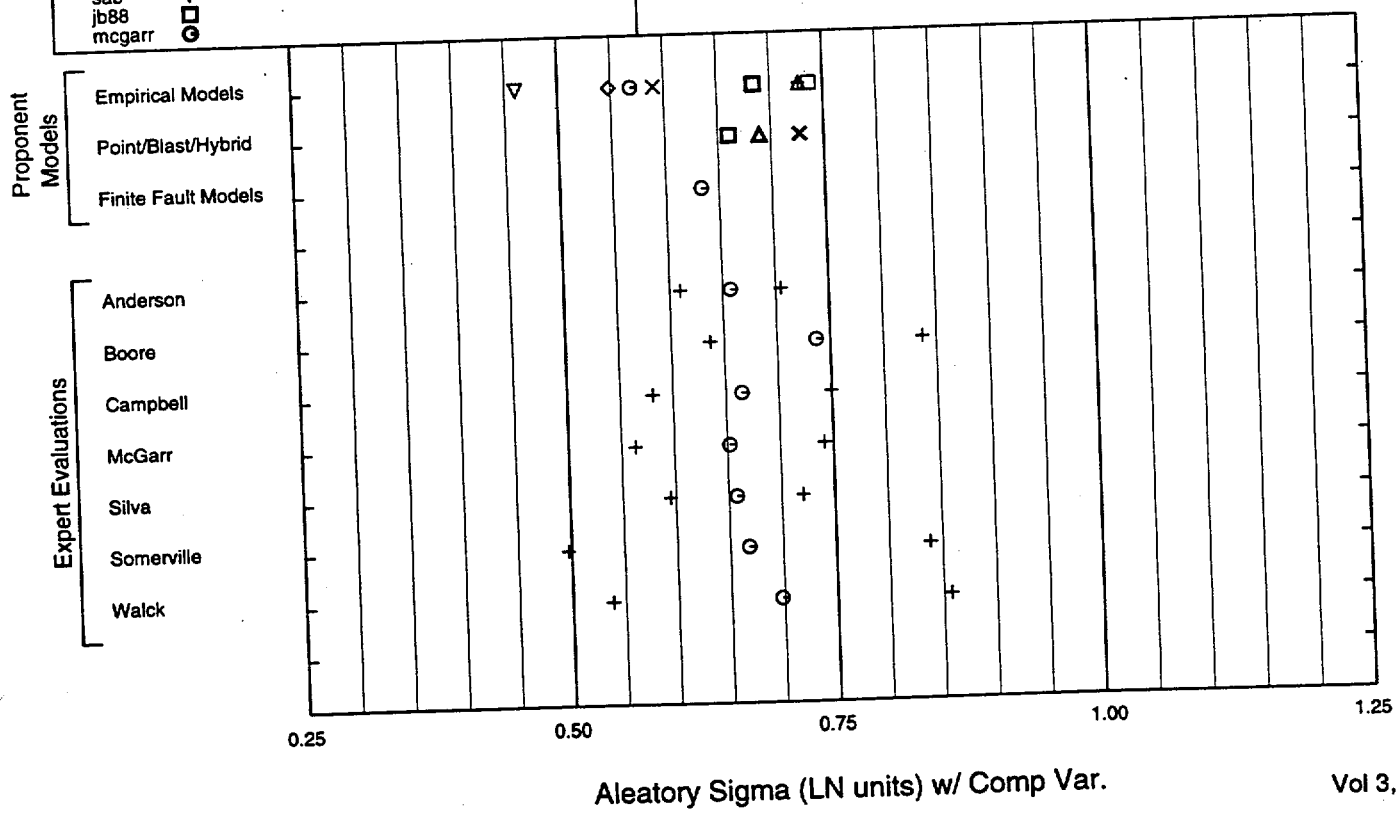

case 21, M= 5.0, shallow, xd= 10 km, HW, 100 Hz, HOR, 6/5/97, Rev 1
Proponent Models
Empirical Models
-- w Camp Crust
-- w Silva src, C crust
-- w A&S src, C crust
Point/Blast/Hybrid
Finite Fault Models
Spudich Data
Normal data
Strike slip data
Expert Evaluations
Anderson
Boore
Campbell
McGarr
Silva
Somerville
Walck
0.001
0.01
0.1
1
10
Spectral Acceleration (g)


LEGEND
Empirical:
a&s
bjf
cam
idr
sad
sea
sab
jb88
mcgarr
Pt/Blast/Hybr:
sil pt
mcgarr
blast2
hybrid
Finite Fault:
and
sil ff
som
andB
andC
silB
Proponent Models
Empirical Models
Point/Blast/Hybrid
Finite Fault Models
Expert Evaluations
Anderson
Boore
Campbell
McGarr
Silva
Somerville
Walck
0.25
0.50
0.75
1.00
1.25
Aleatory Sigma (LN units) w/ Comp Var.

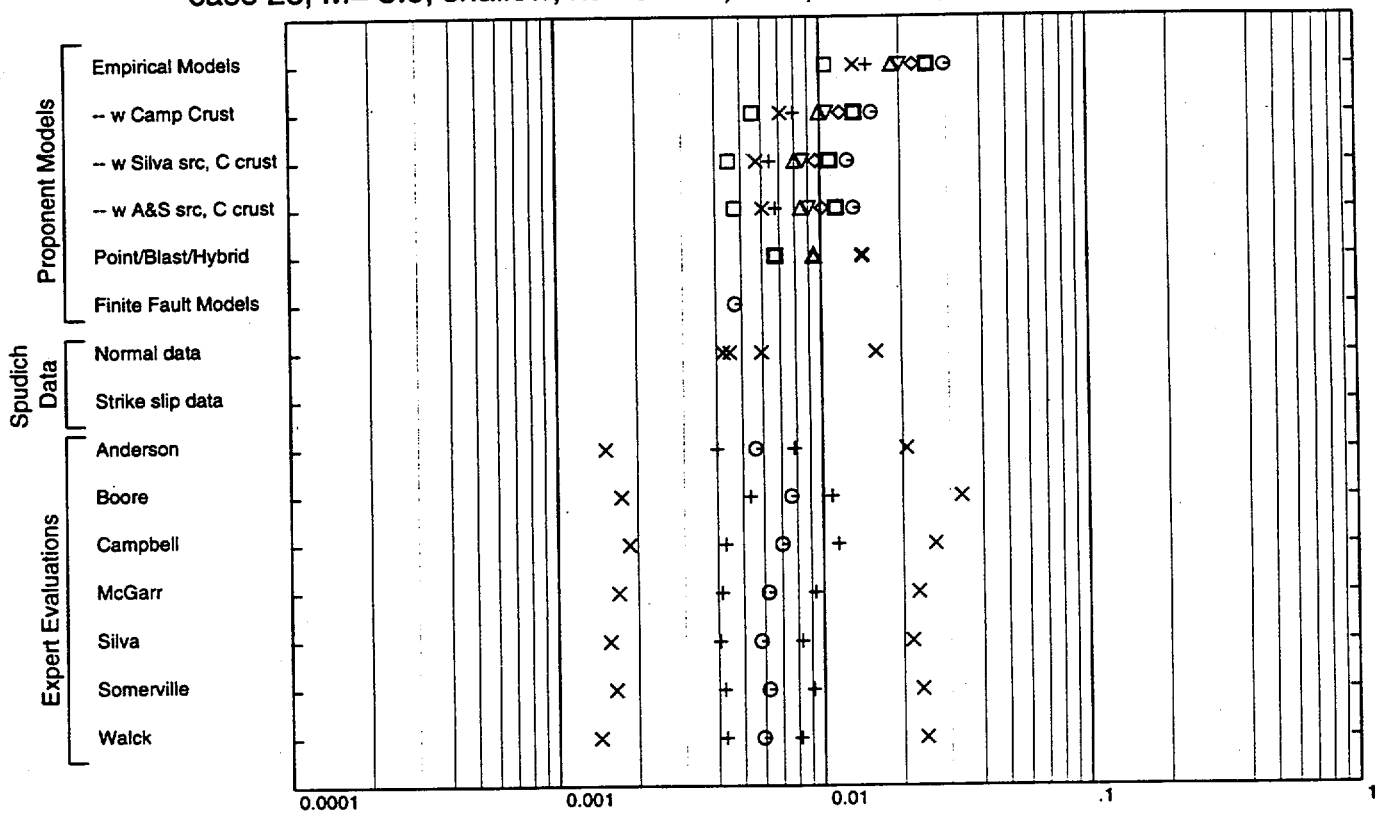


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



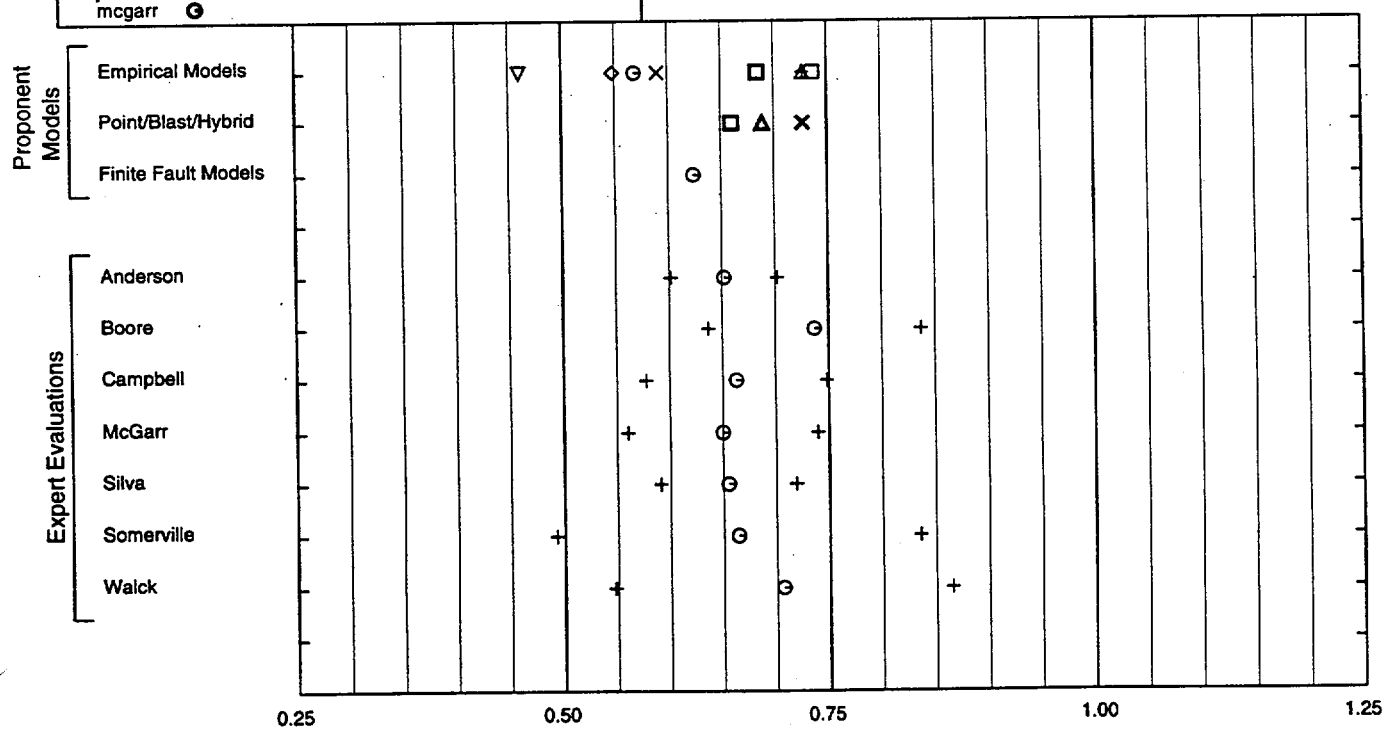
case 23, M= 5.0, shallow, xd= 50 km, HW, 100 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

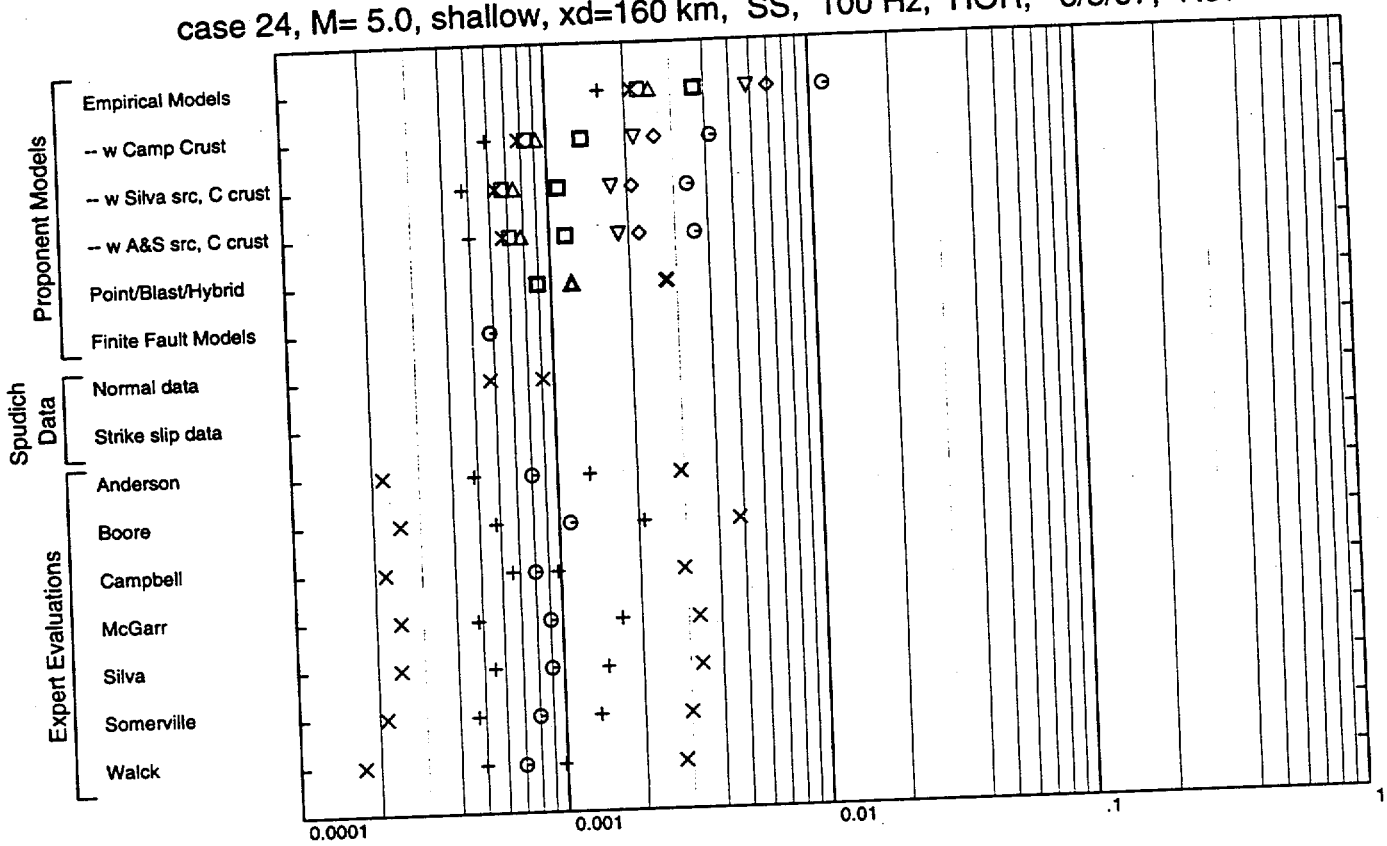
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

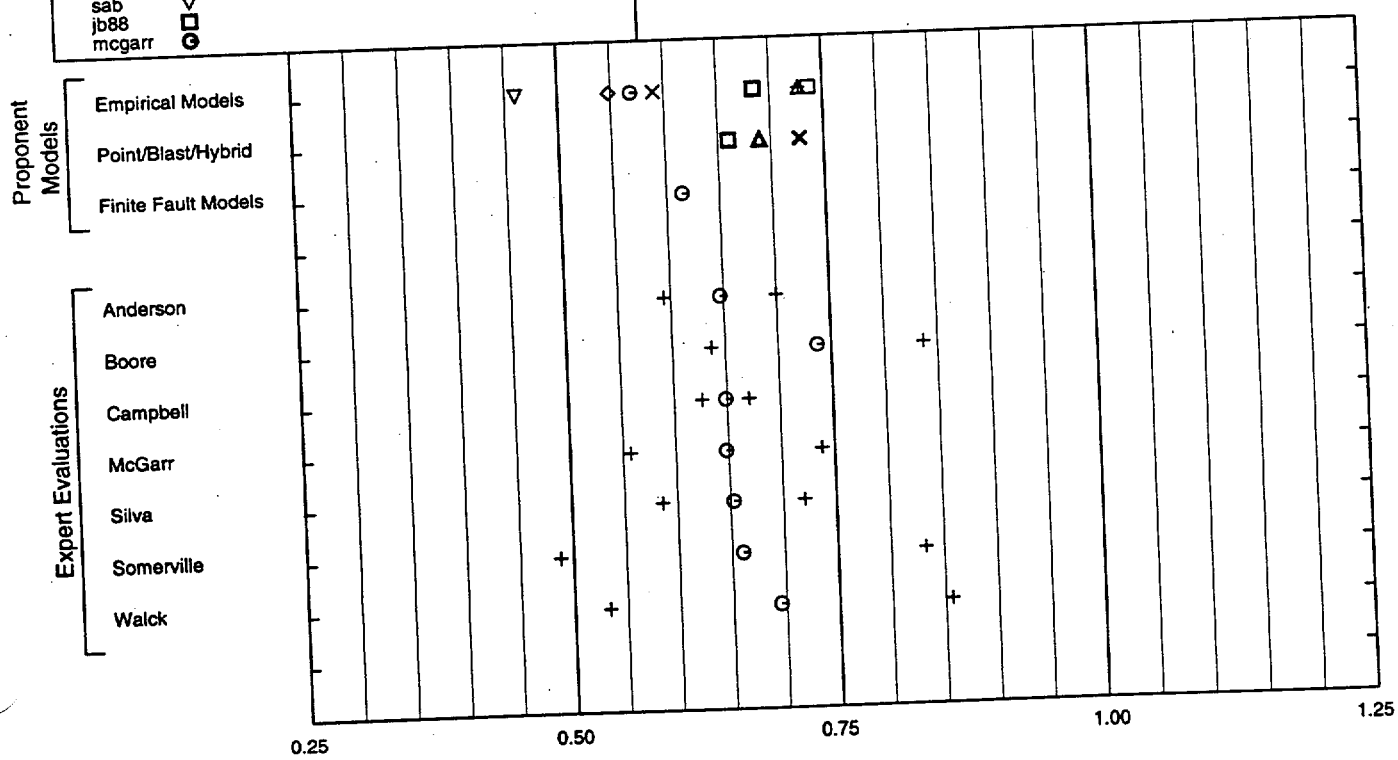
case 24, M= 5.0, shallow, xd=160 km, SS, 100 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

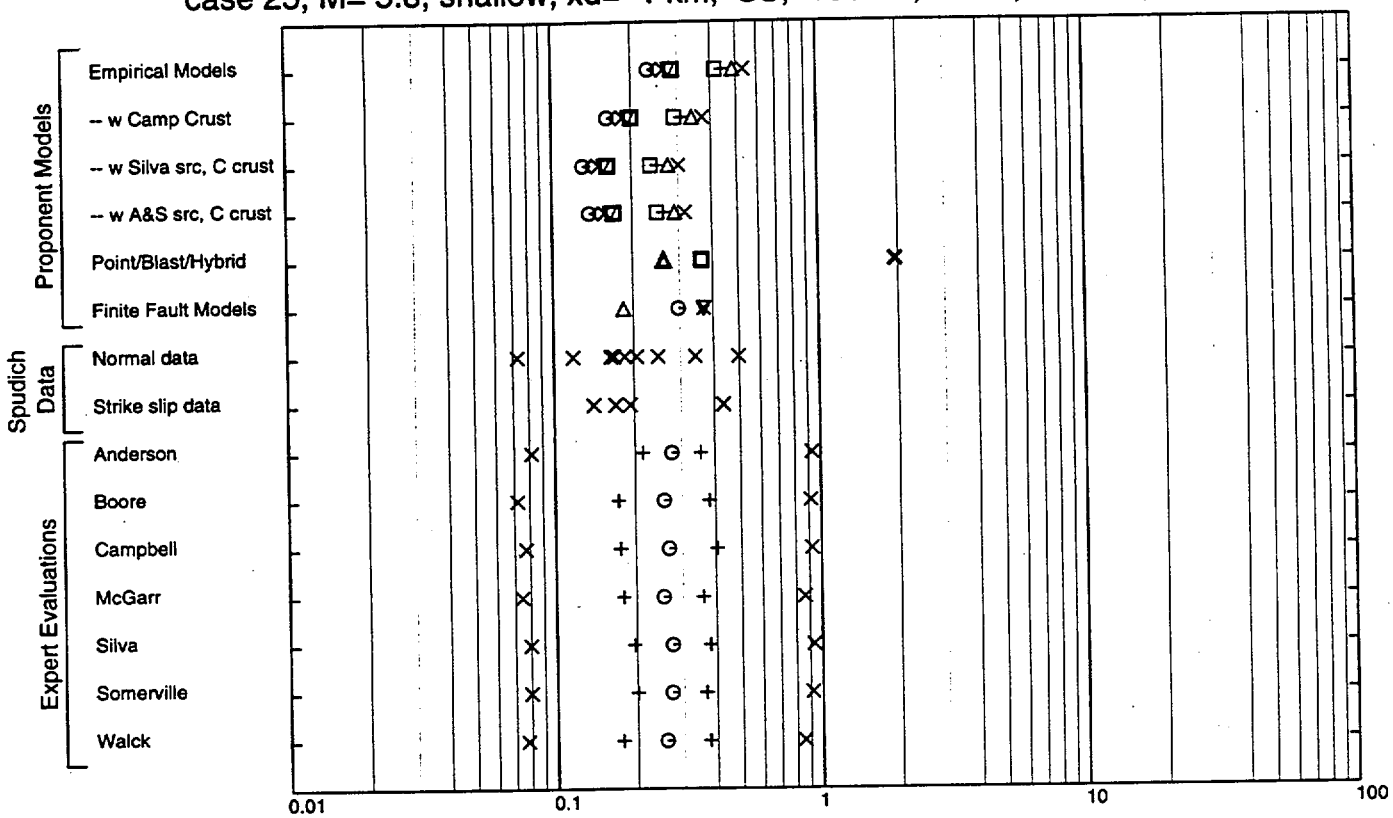
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

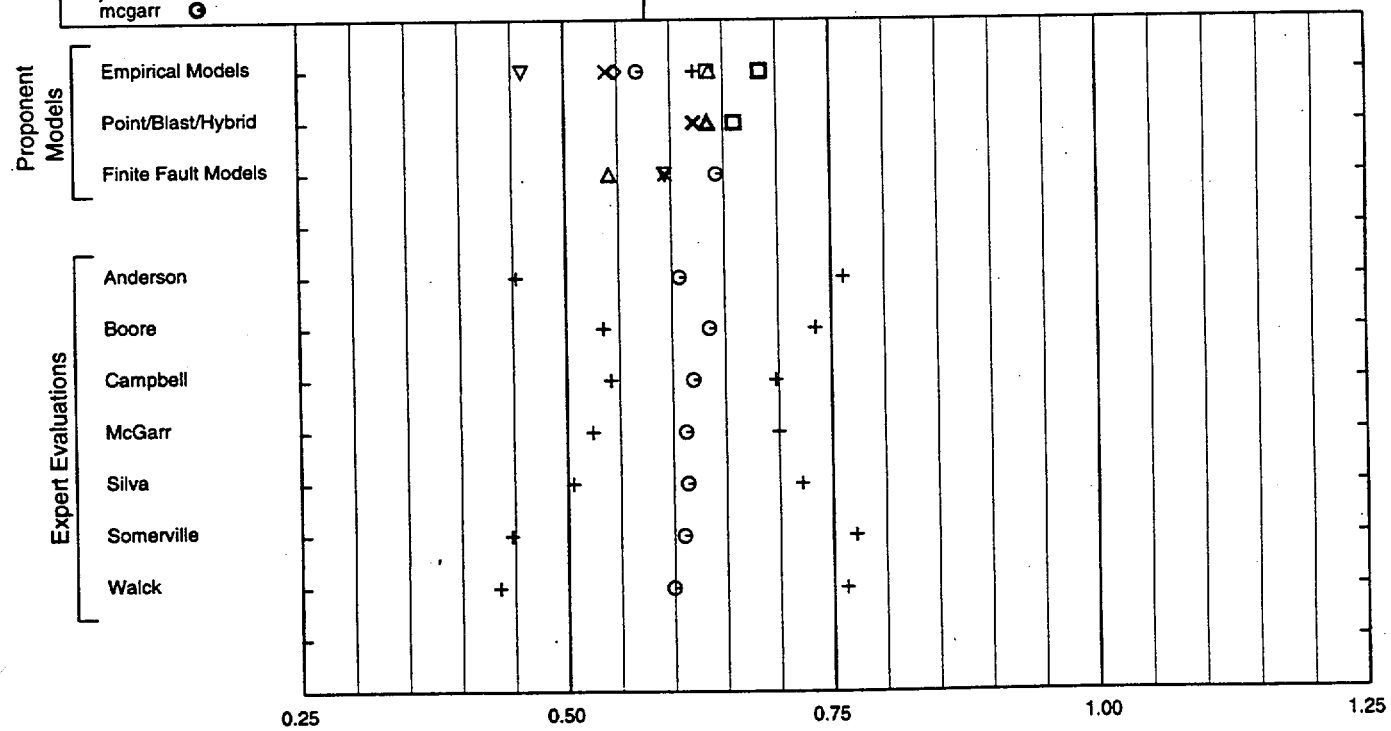
case 25, M= 5.8, shallow, xd= 1 km, SS, 100 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

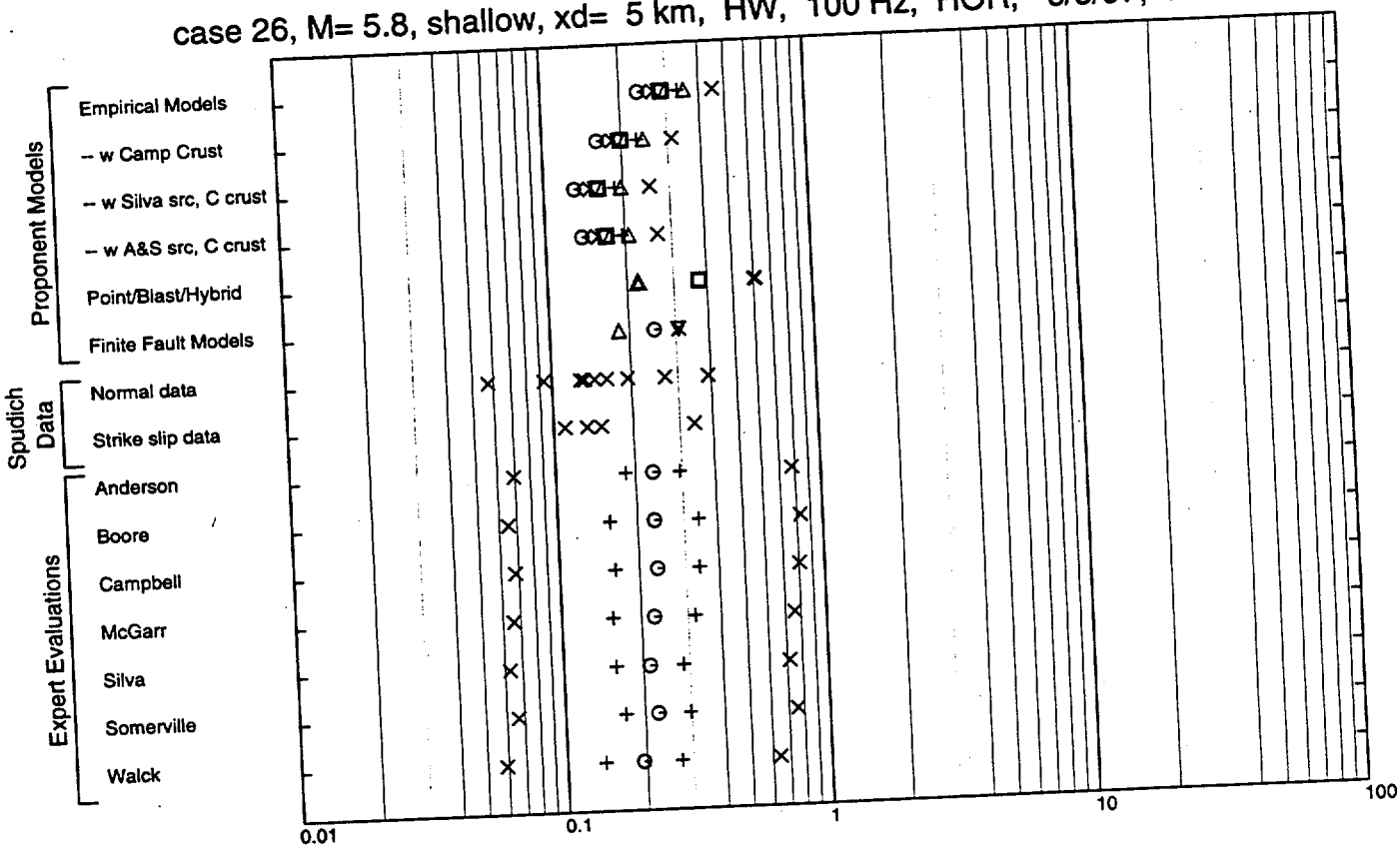
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



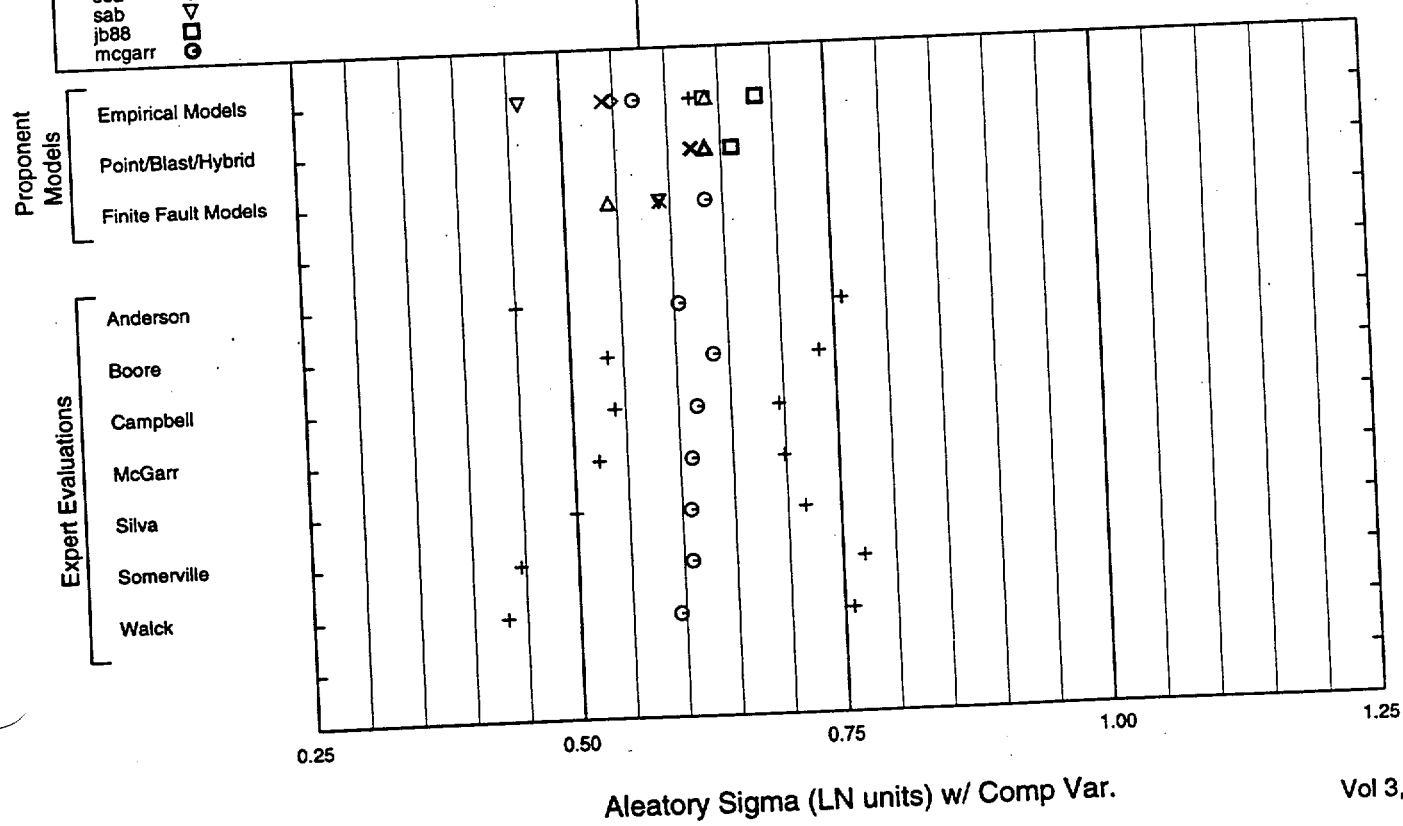
Aleatory Sigma (LN units) w/ Comp Var.

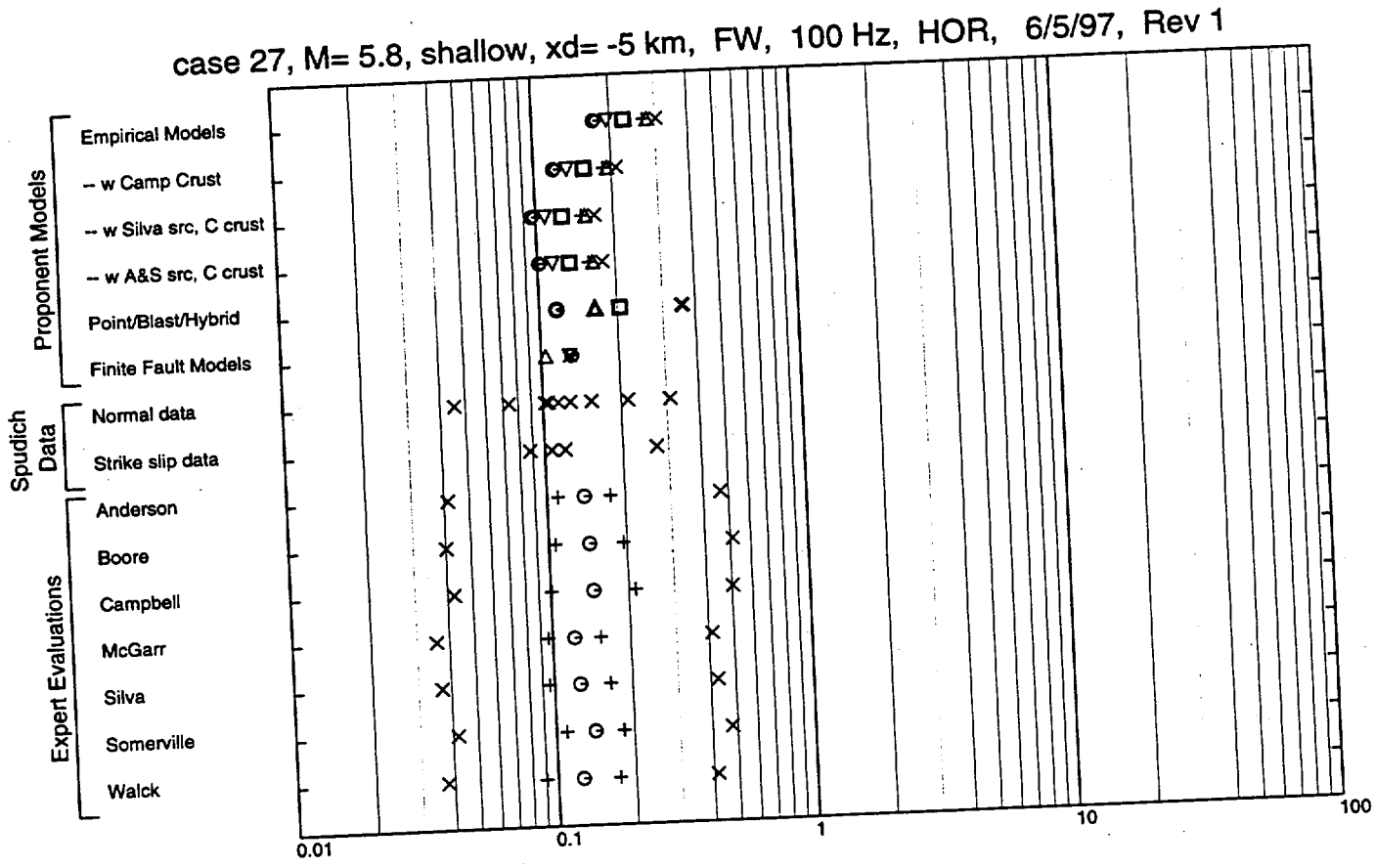
case 26, M= 5.8, shallow, xd= 5 km, HW, 100 Hz, HOR, 6/5/97, Rev 1



LEGEND

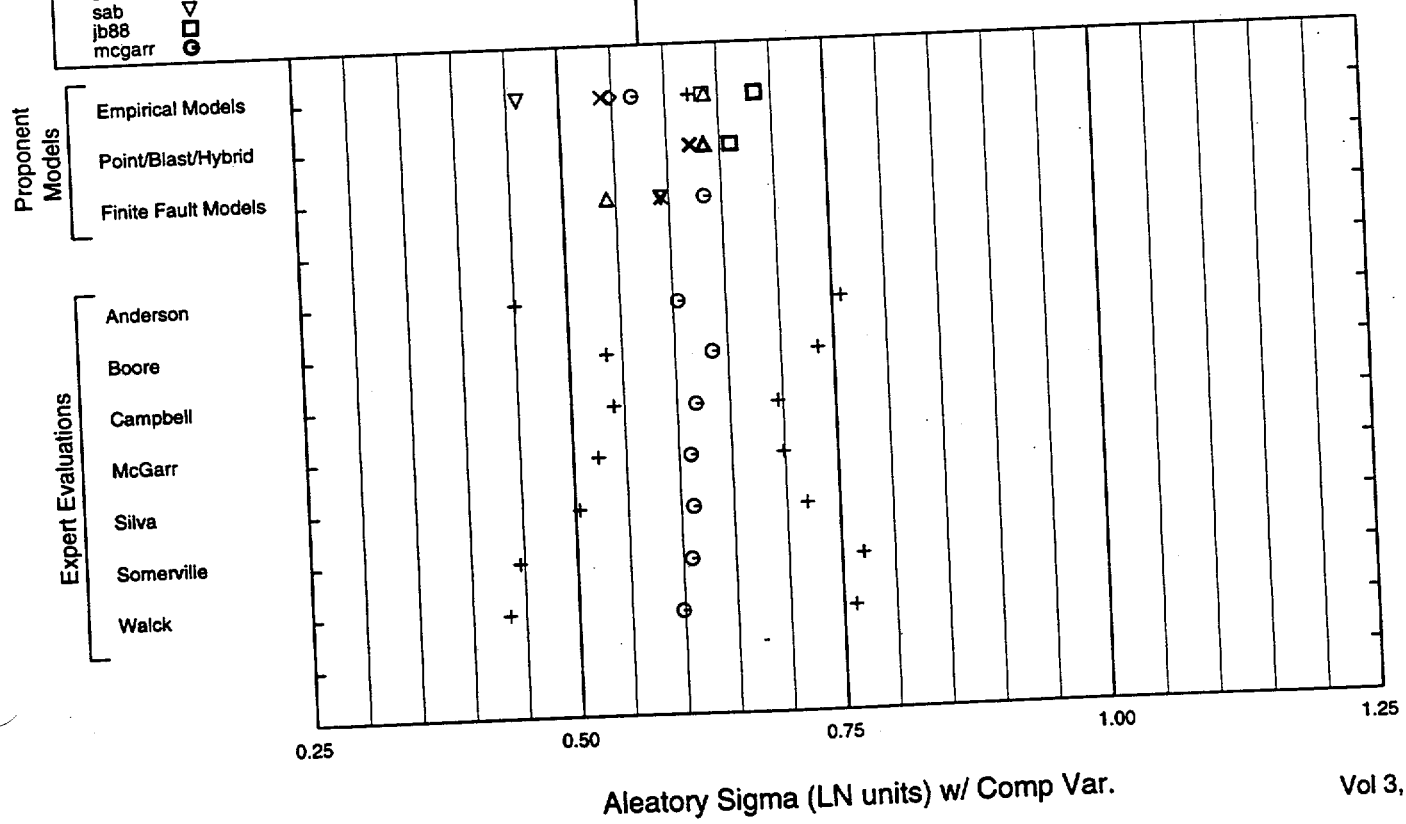
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



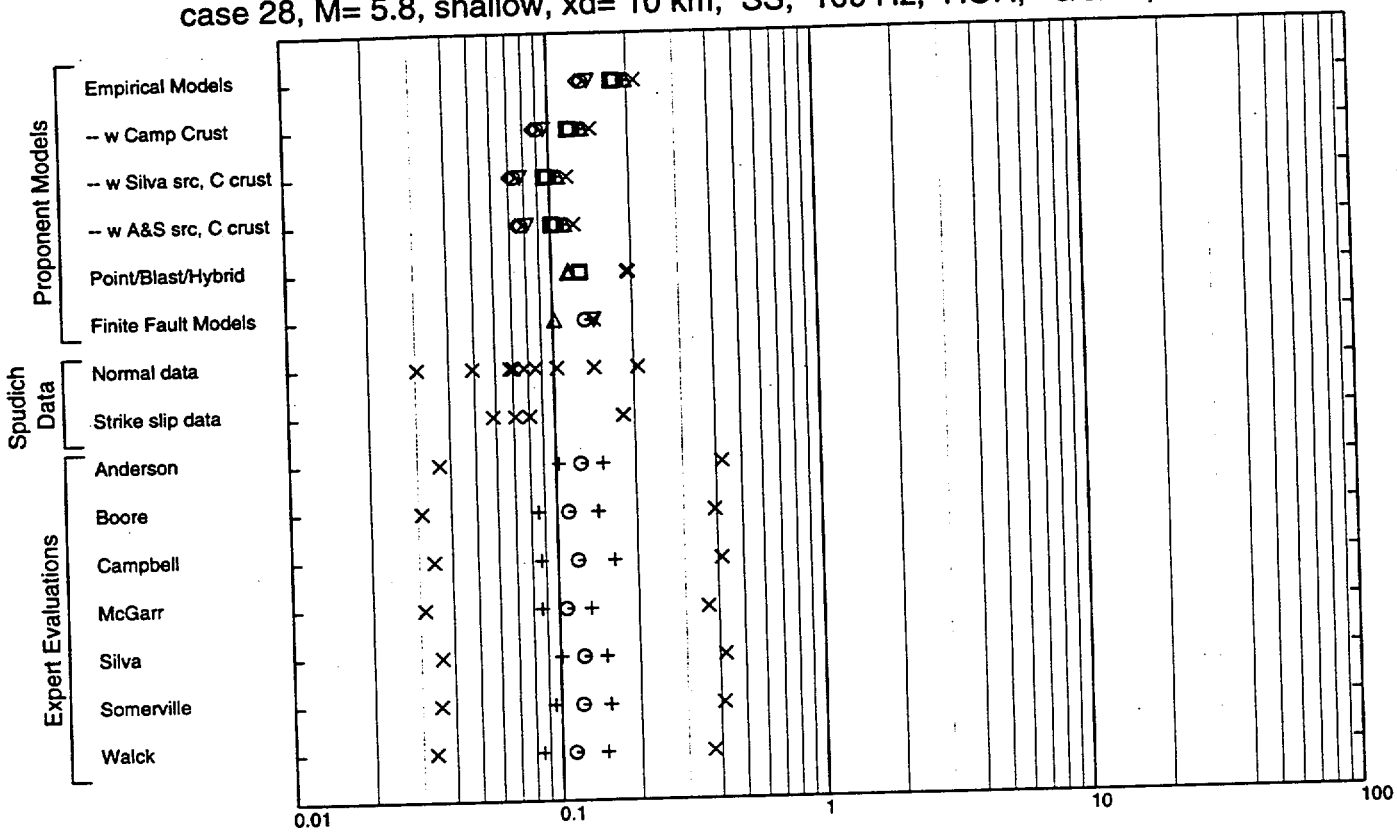


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

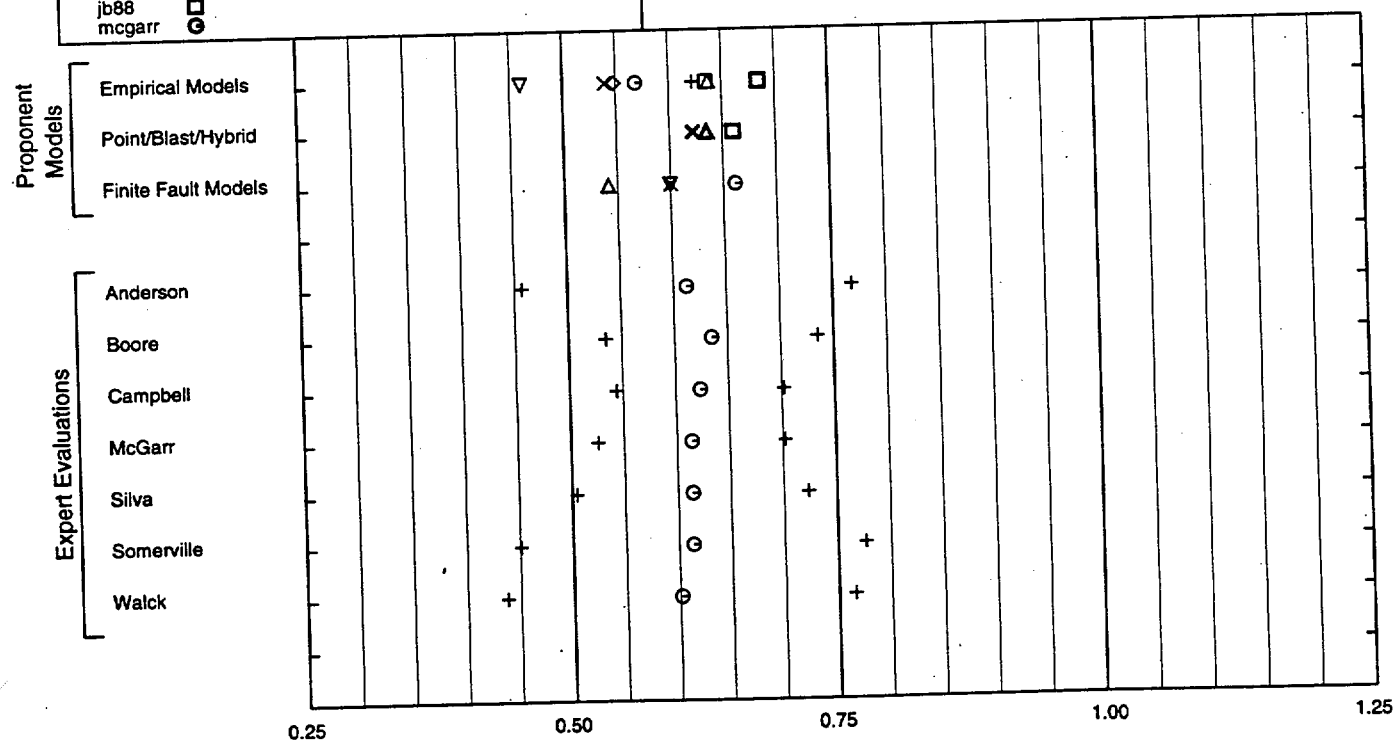


case 28, M= 5.8, shallow, xd= 10 km, SS, 100 Hz, HOR, 6/5/97, Rev 1

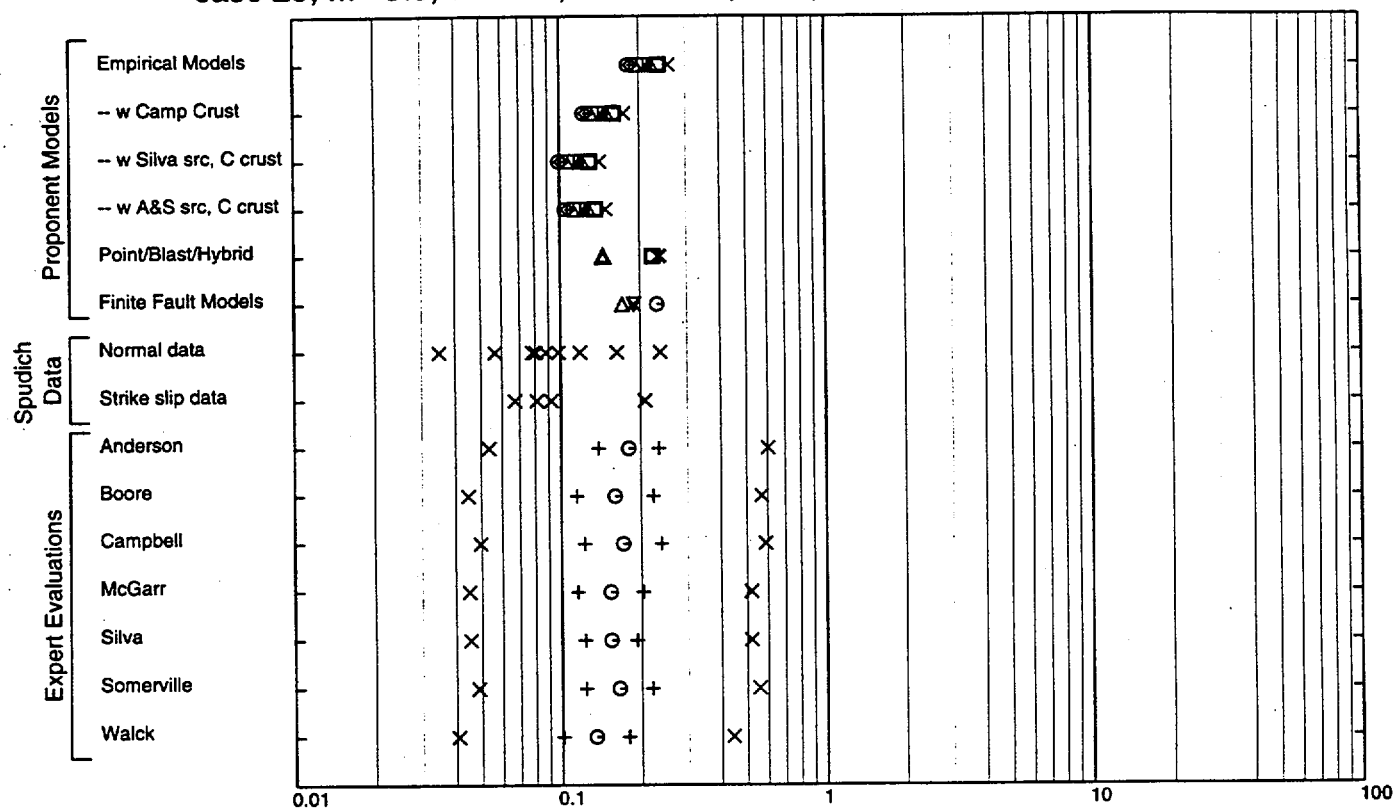


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



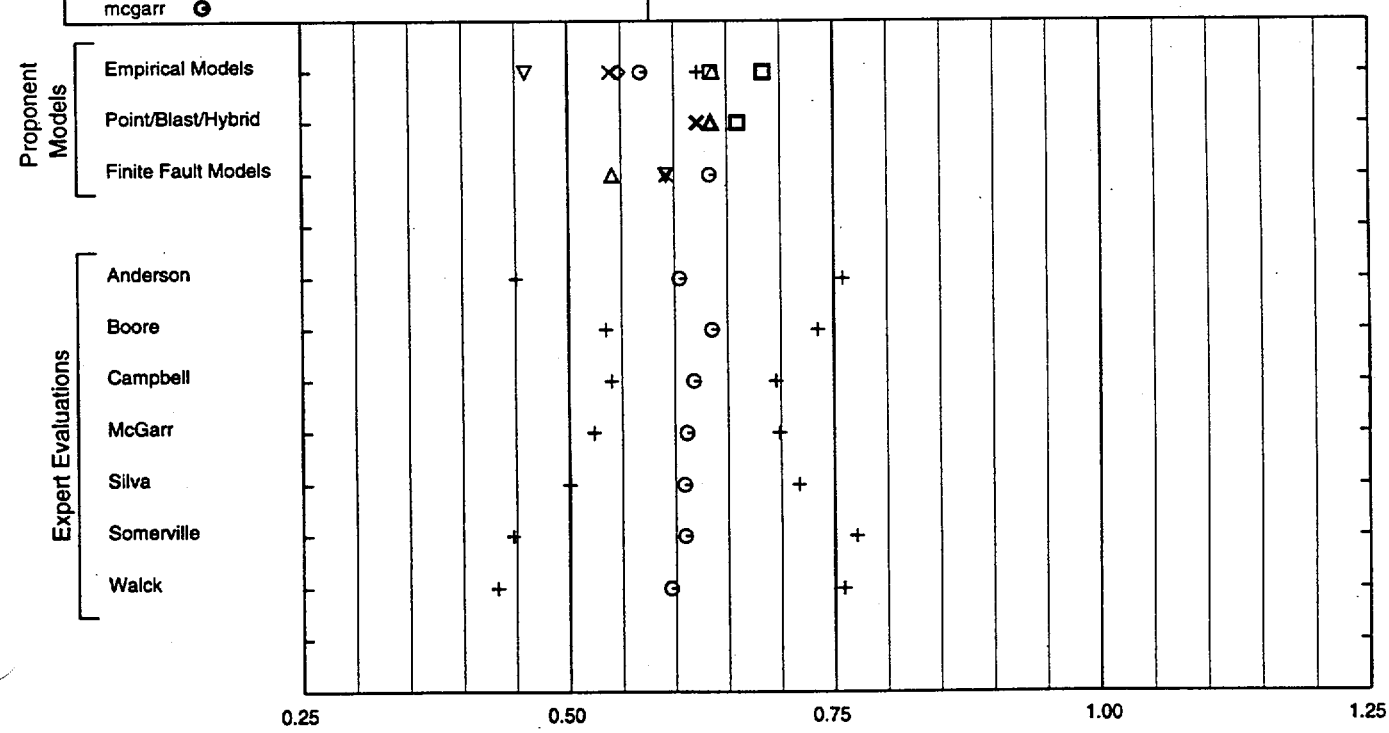
case 29, M= 5.8, shallow, xd= 10 km, HW, 100 Hz, HOR, 6/5/97, Rev 1



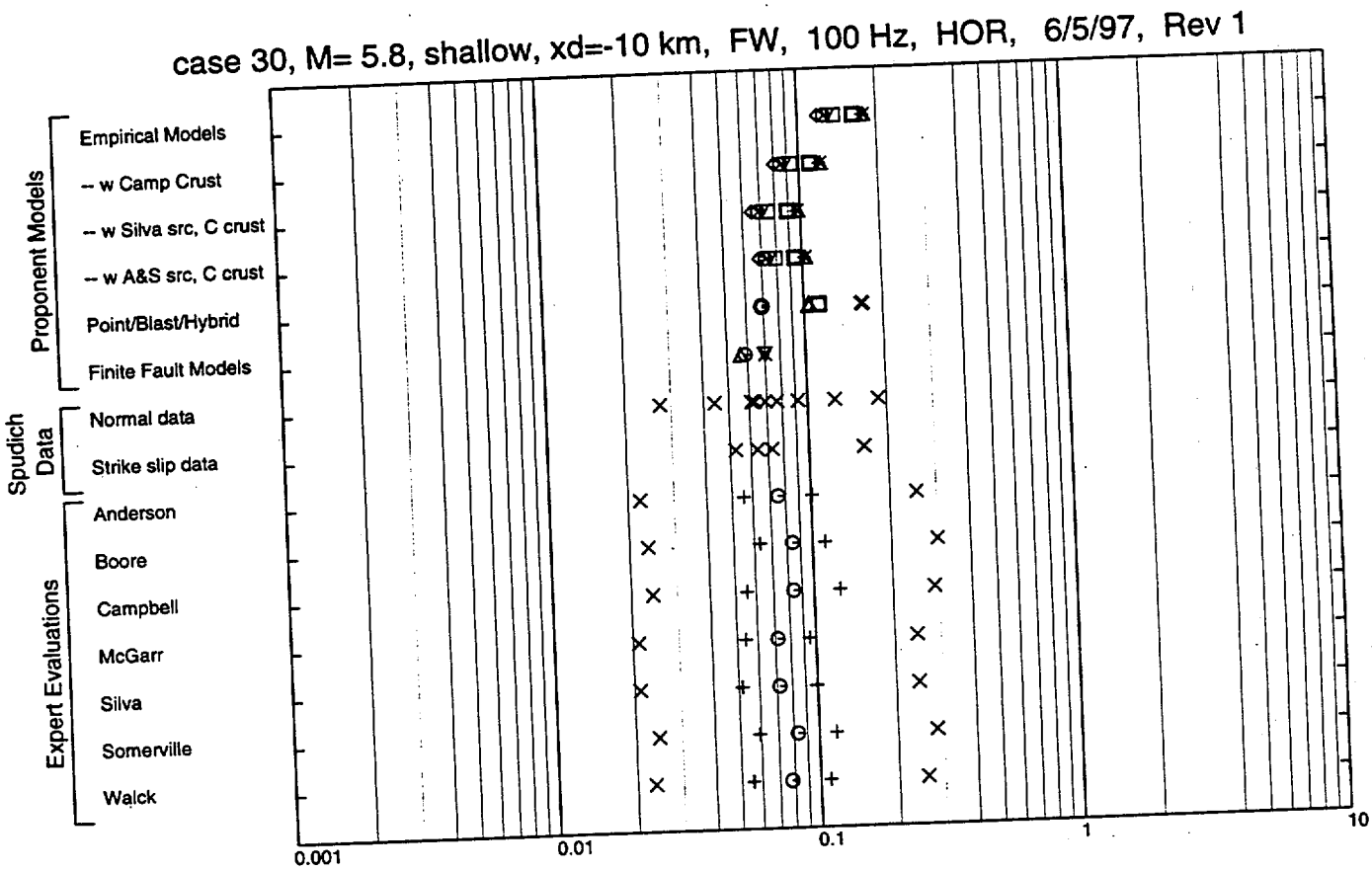
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

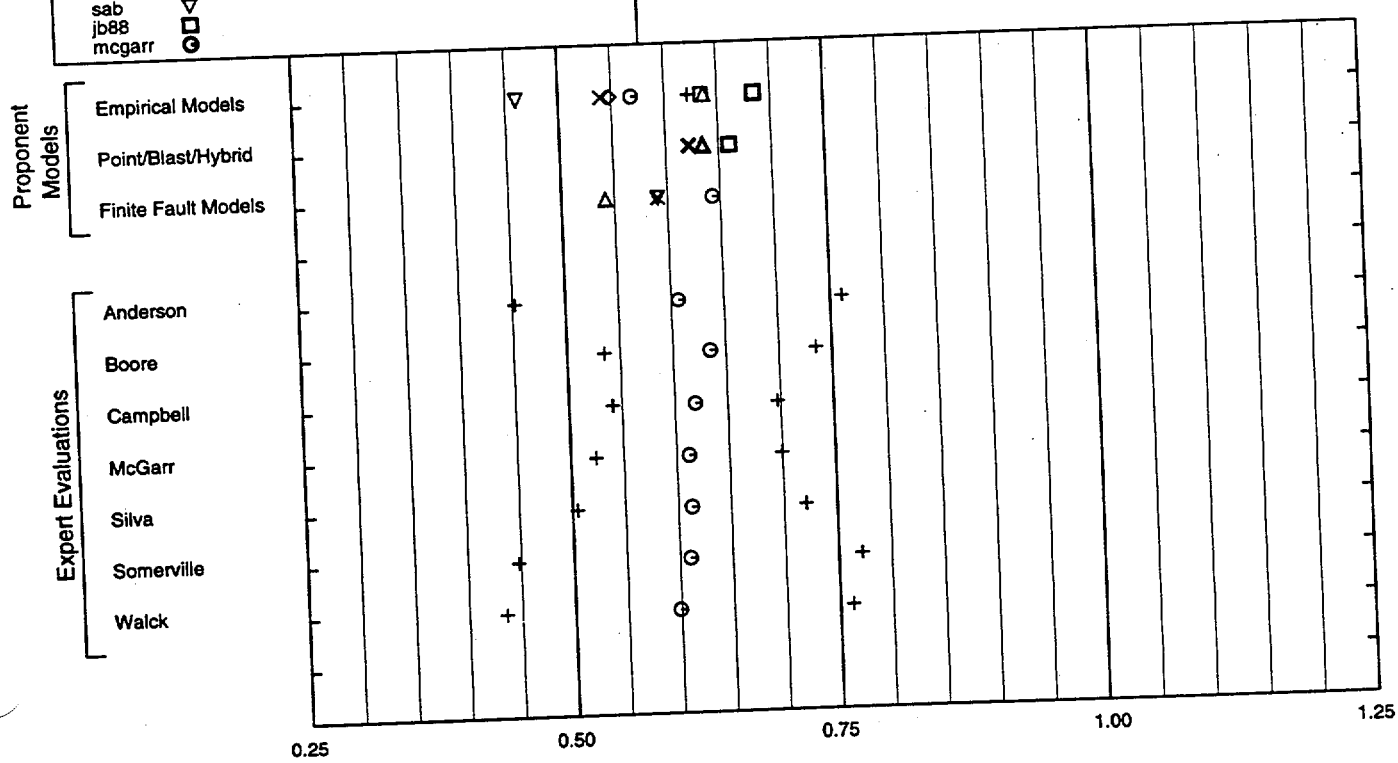


Aleatory Sigma (LN units) w/ Comp Var.

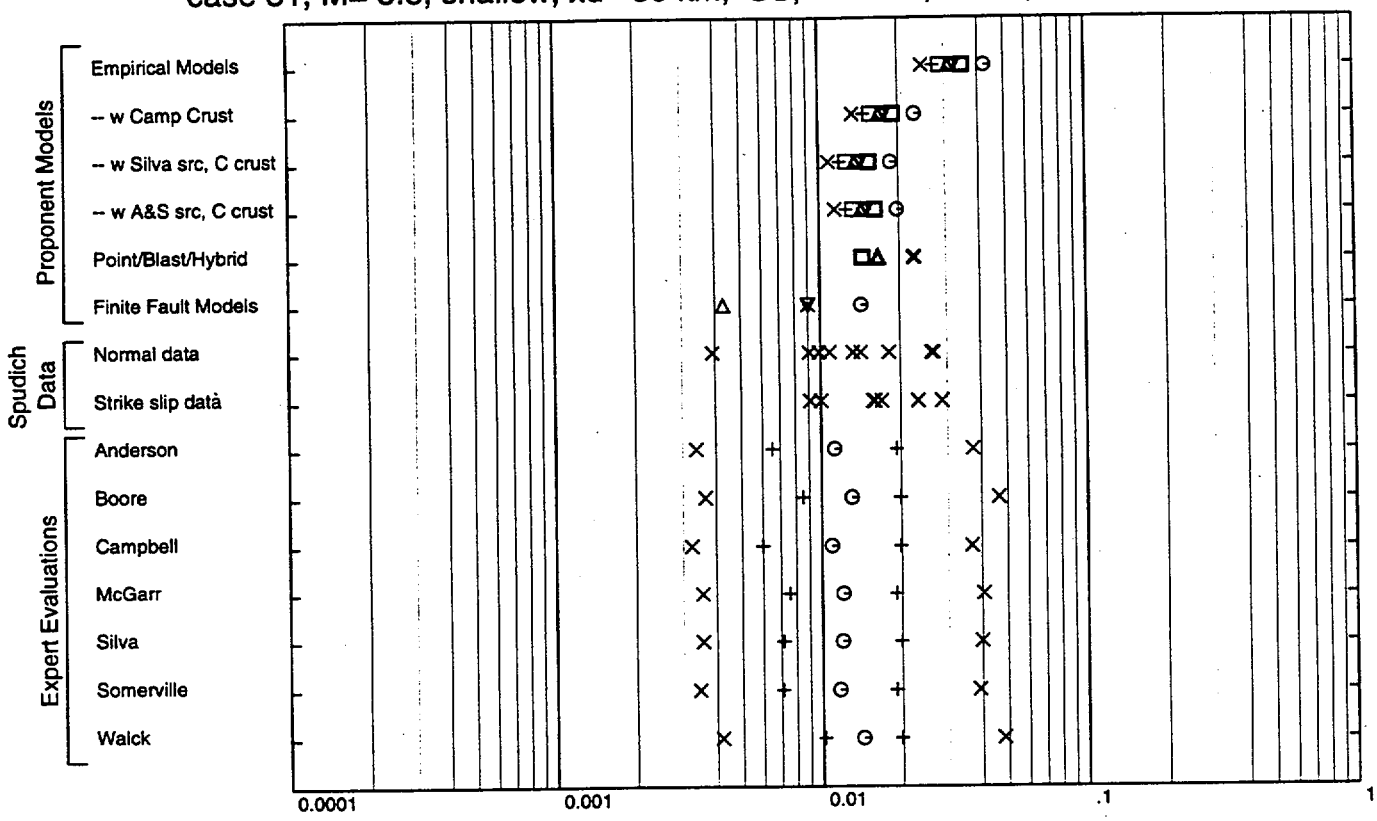


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



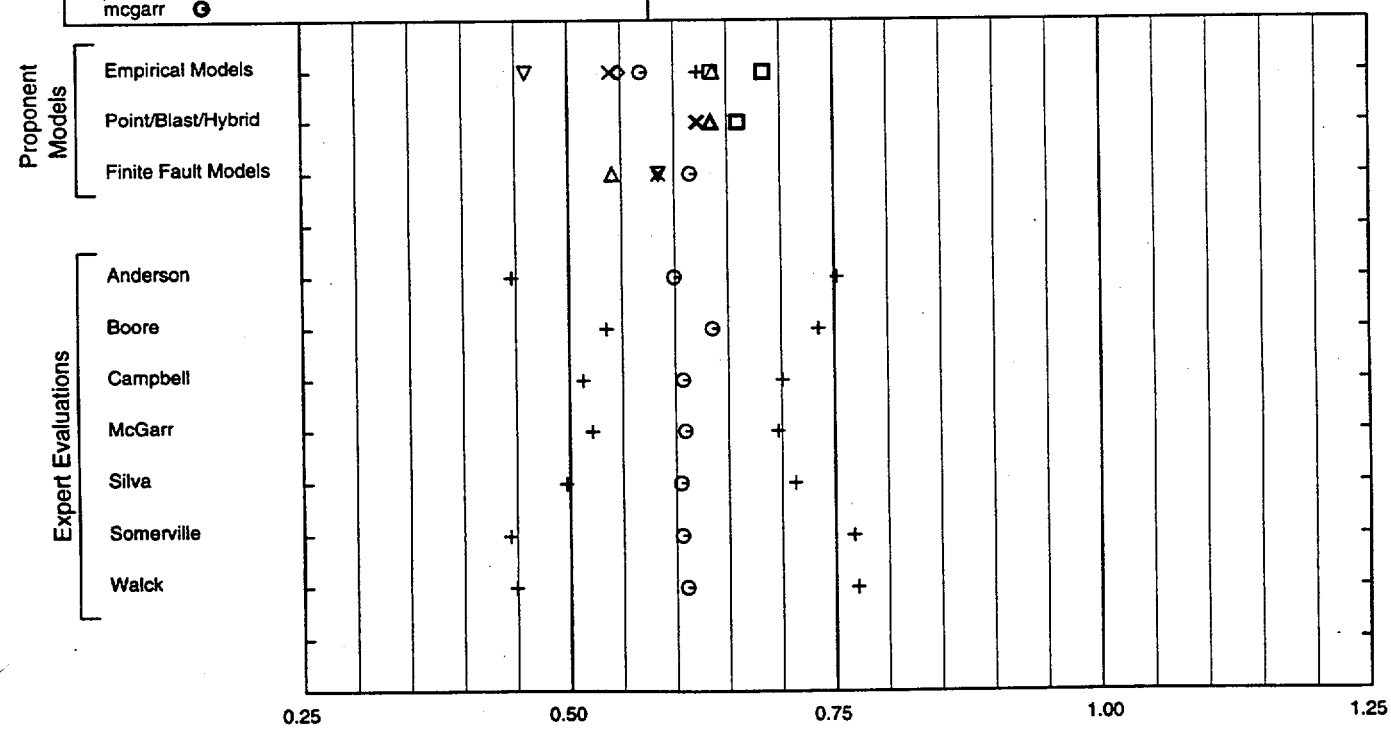
case 31, M= 5.8, shallow, xd= 50 km, SS, 100 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

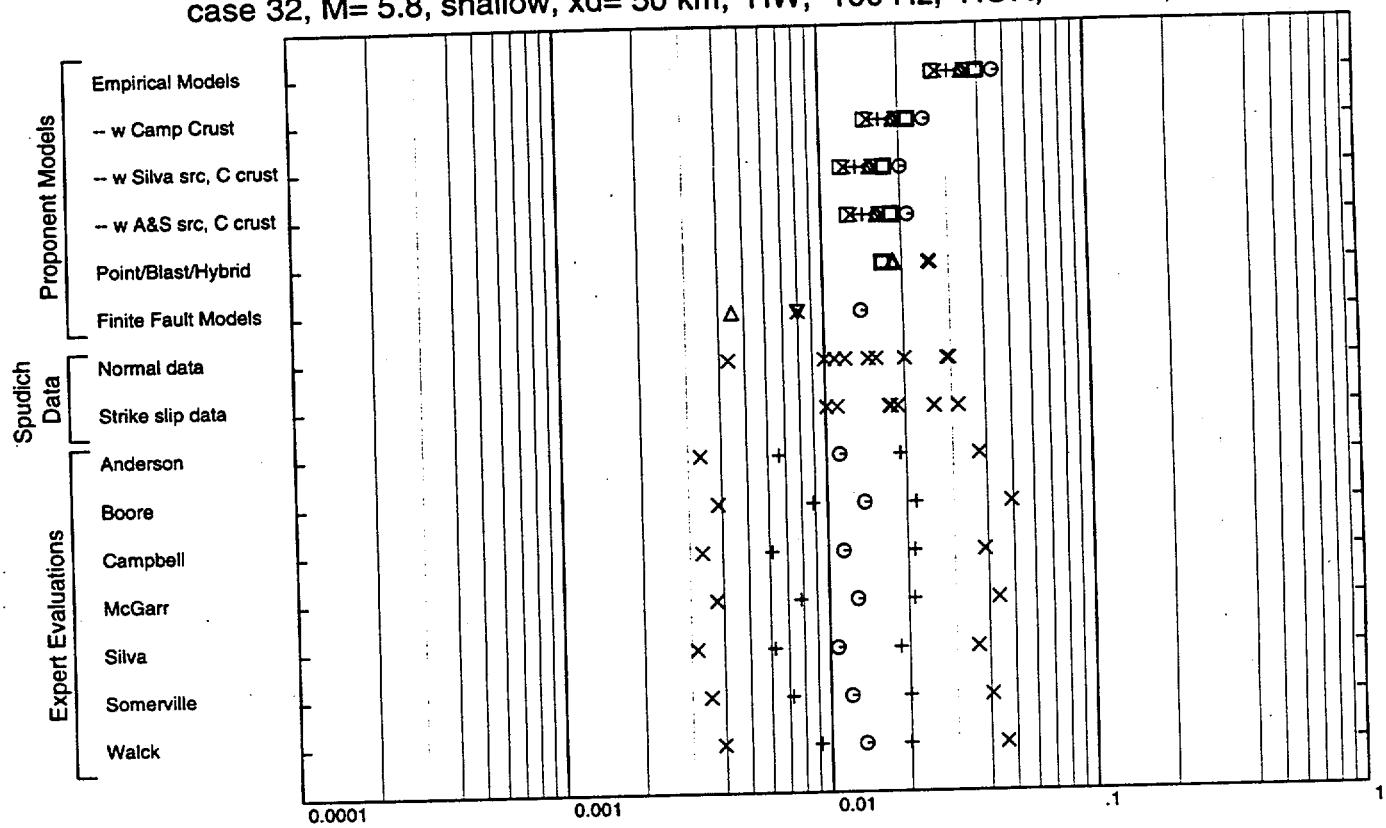
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



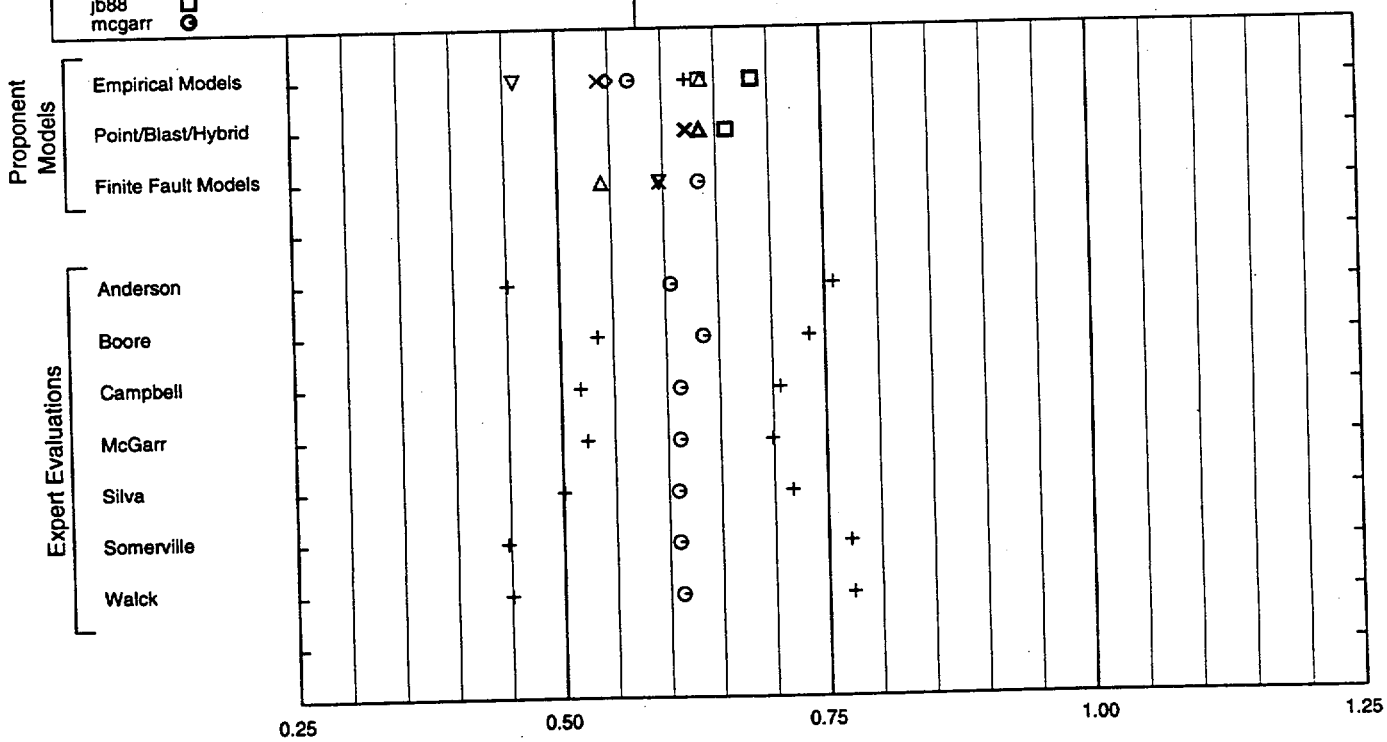
Aleatory Sigma (LN units) w/ Comp Var.

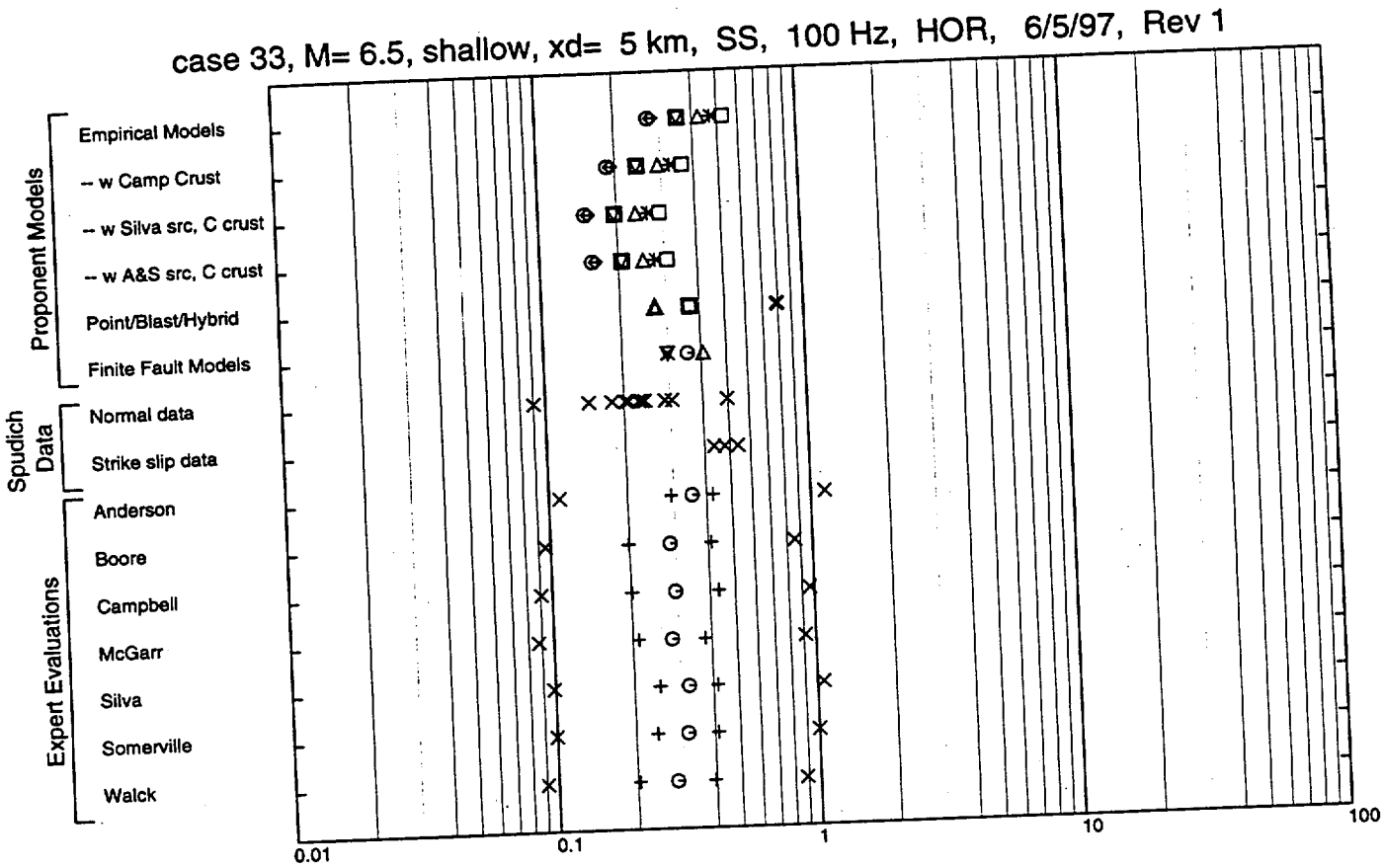
case 32, M= 5.8, shallow, xd= 50 km, HW, 100 Hz, HOR, 6/5/97, Rev 1



LEGEND

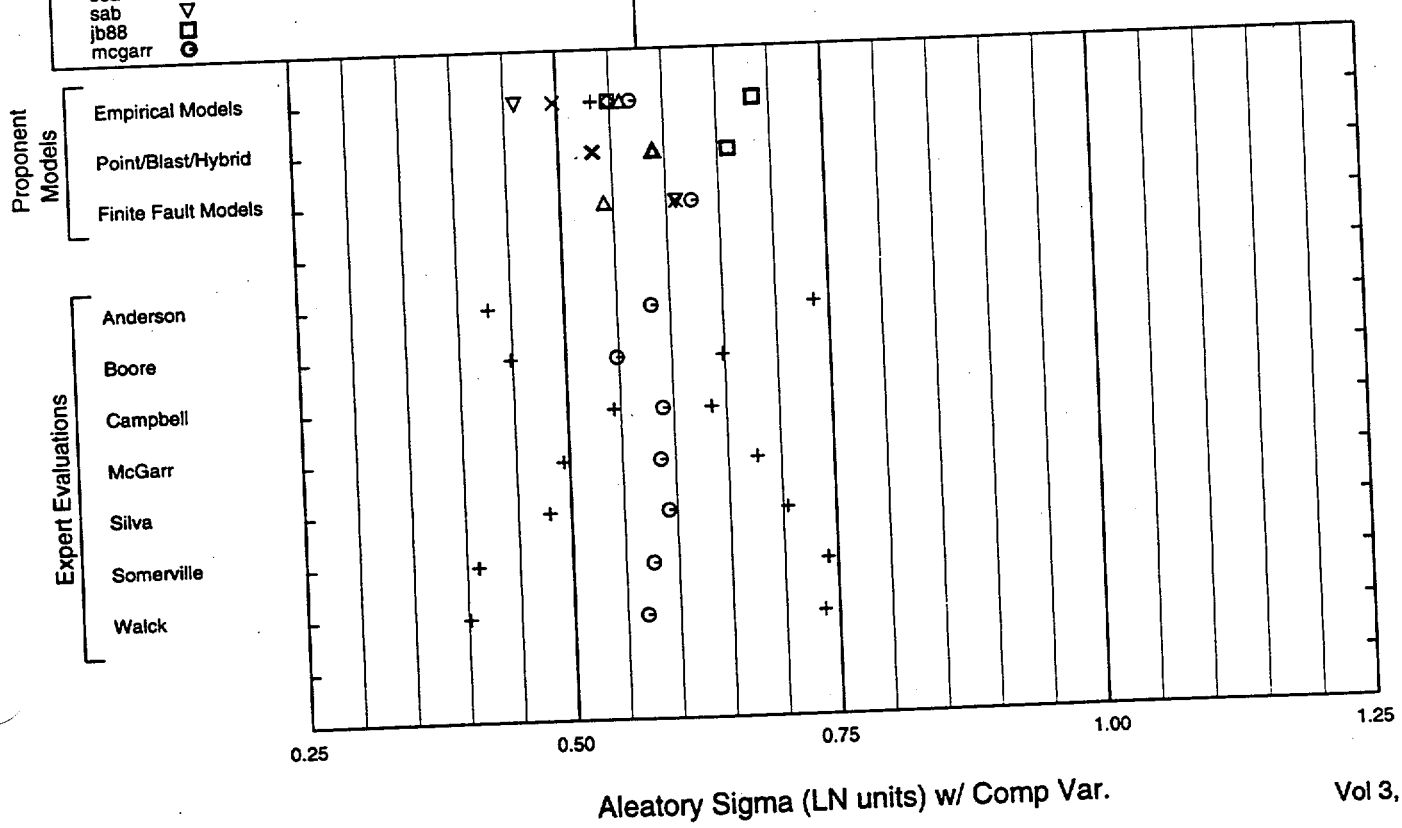
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



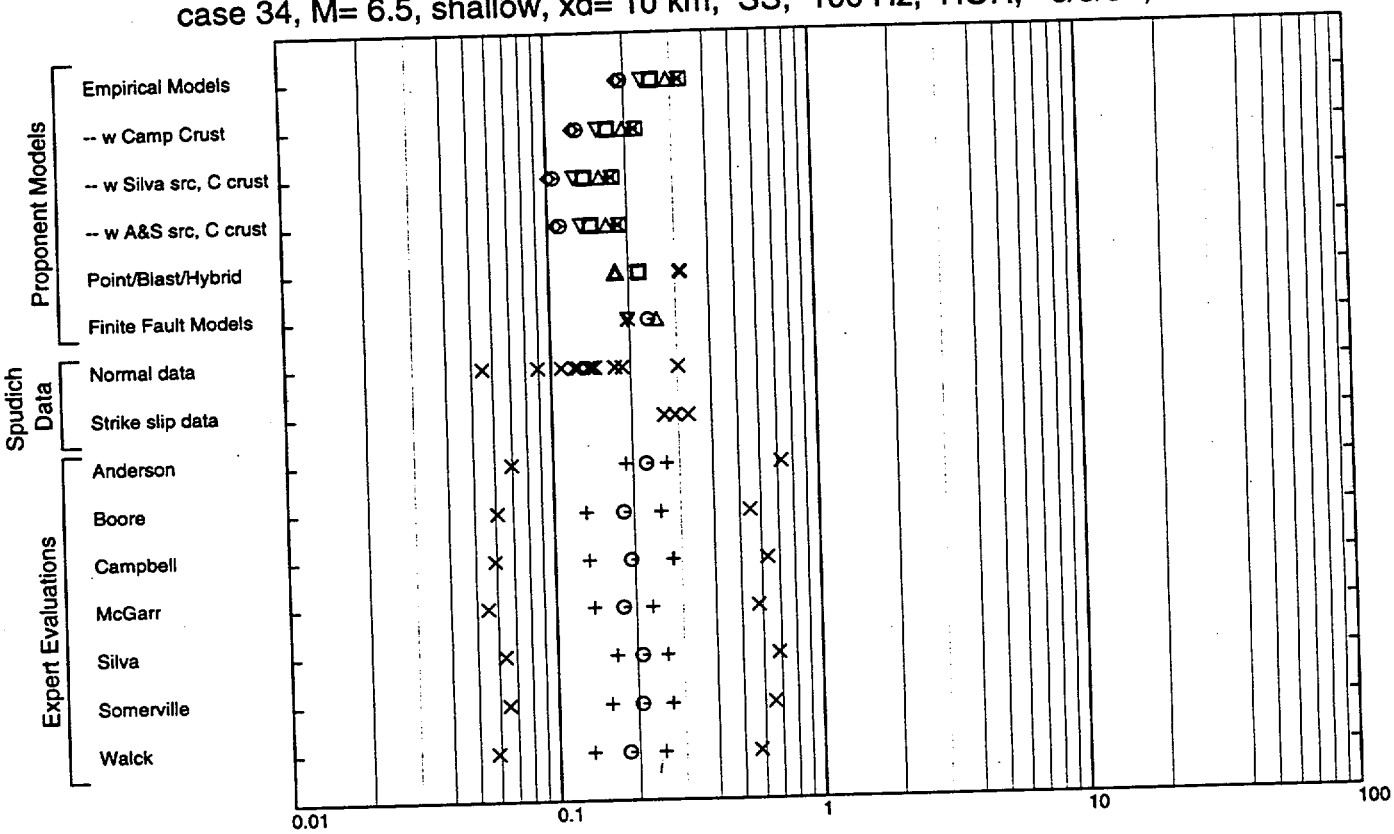


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

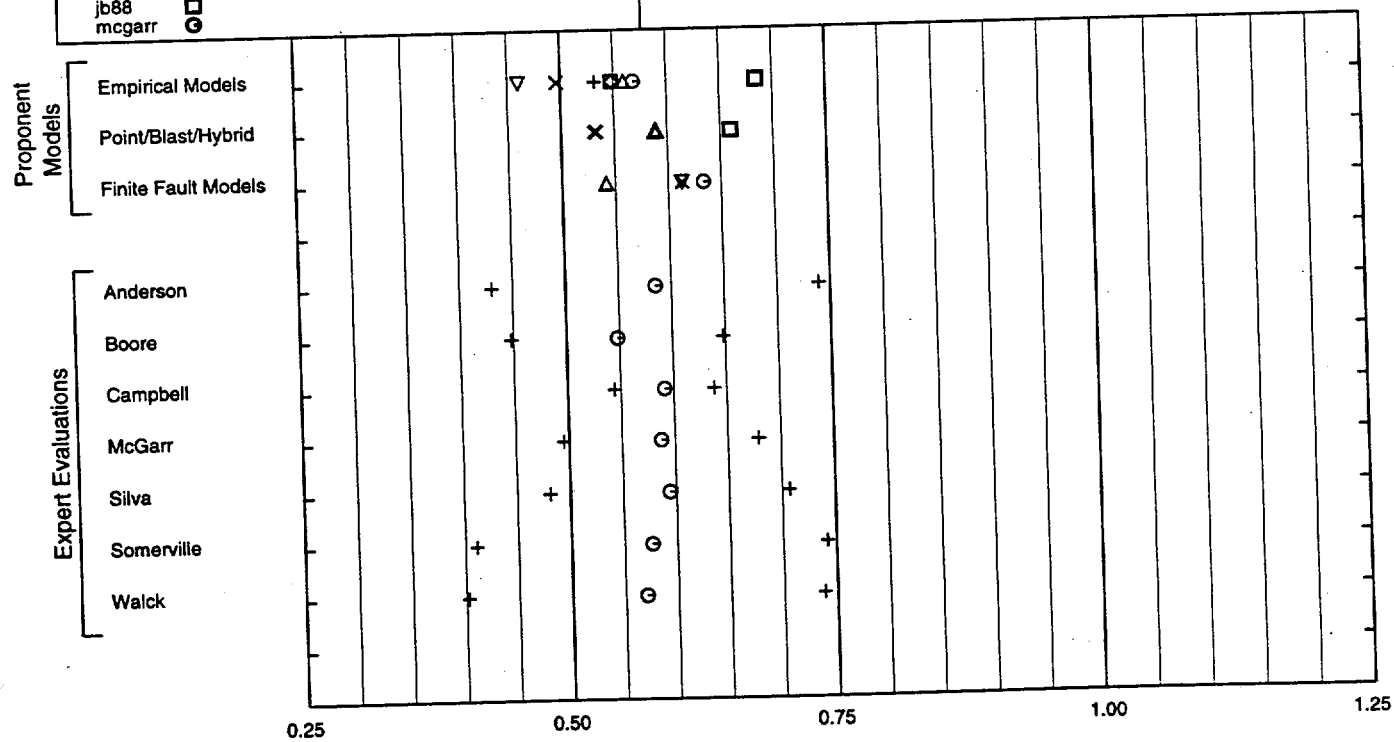


case 34, M= 6.5, shallow, xd= 10 km, SS, 100 Hz, HOR, 6/5/97, Rev 1

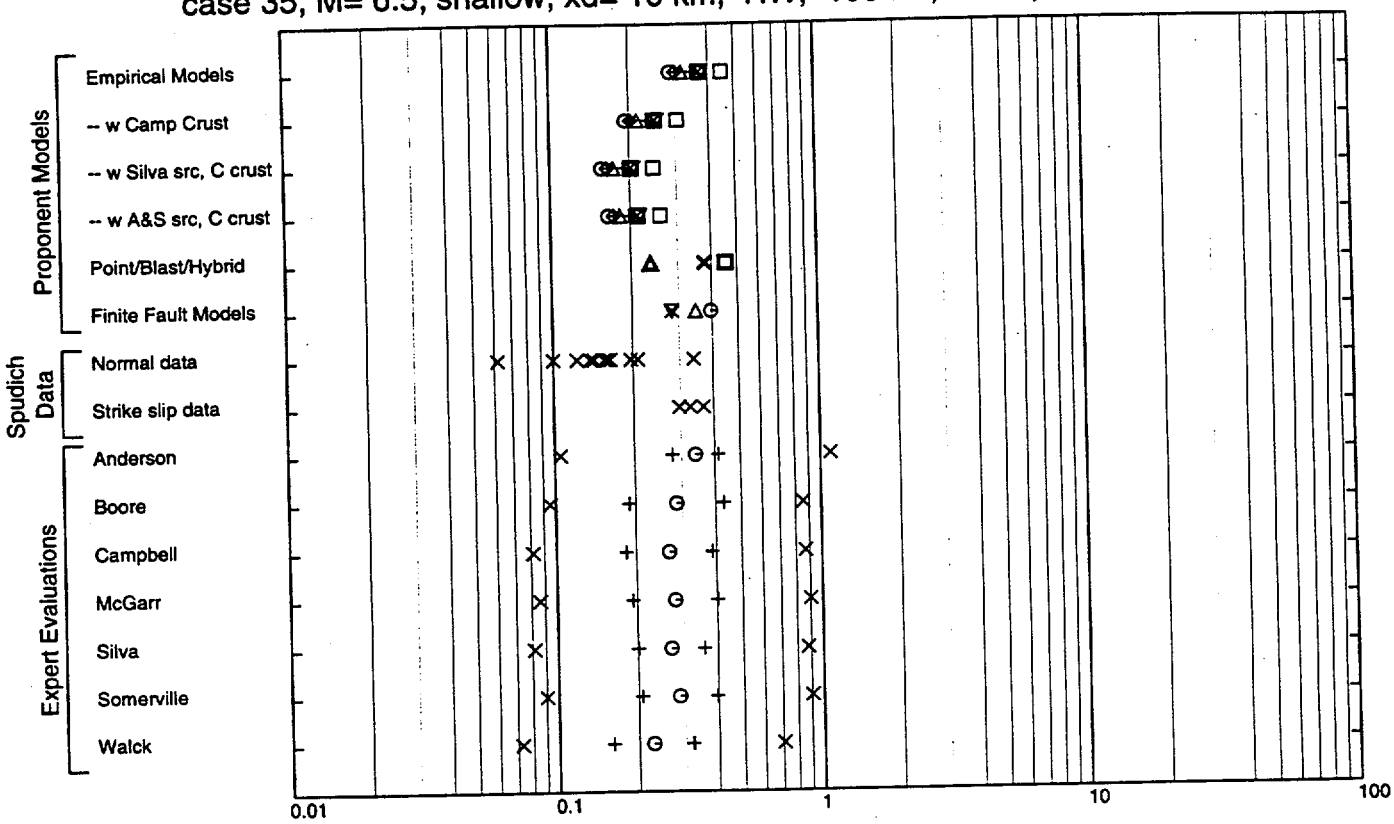


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



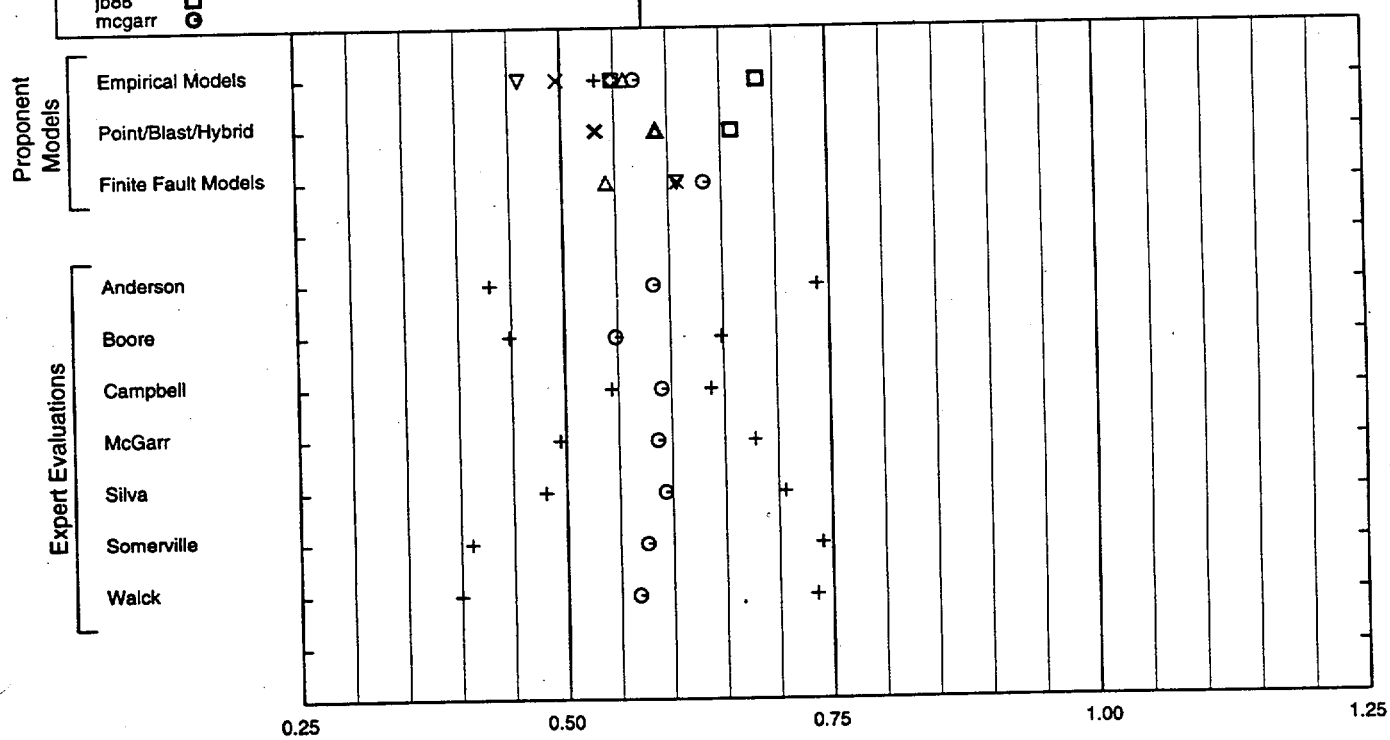
case 35, M= 6.5, shallow, xd= 10 km, HW, 100 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

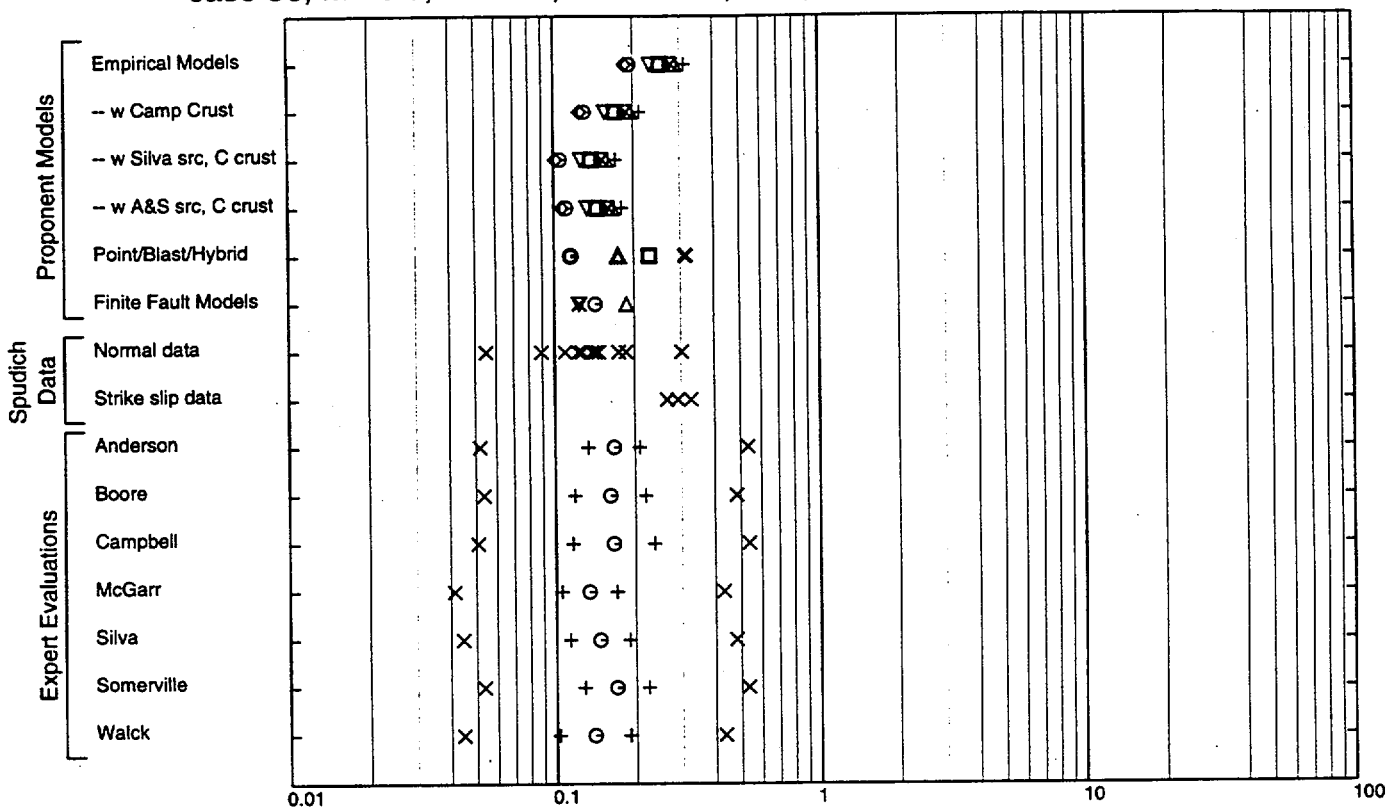
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

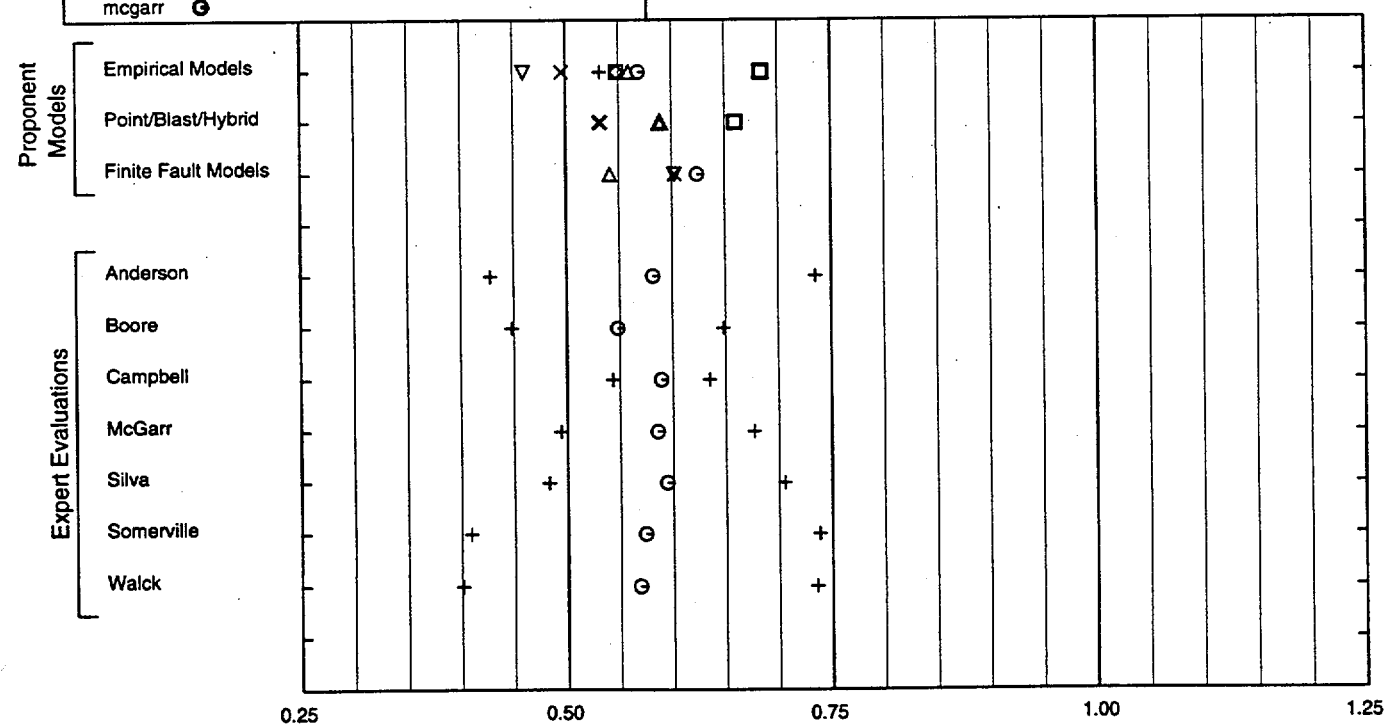
case 36, M= 6.5, shallow, xd=-10 km, FW, 100 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

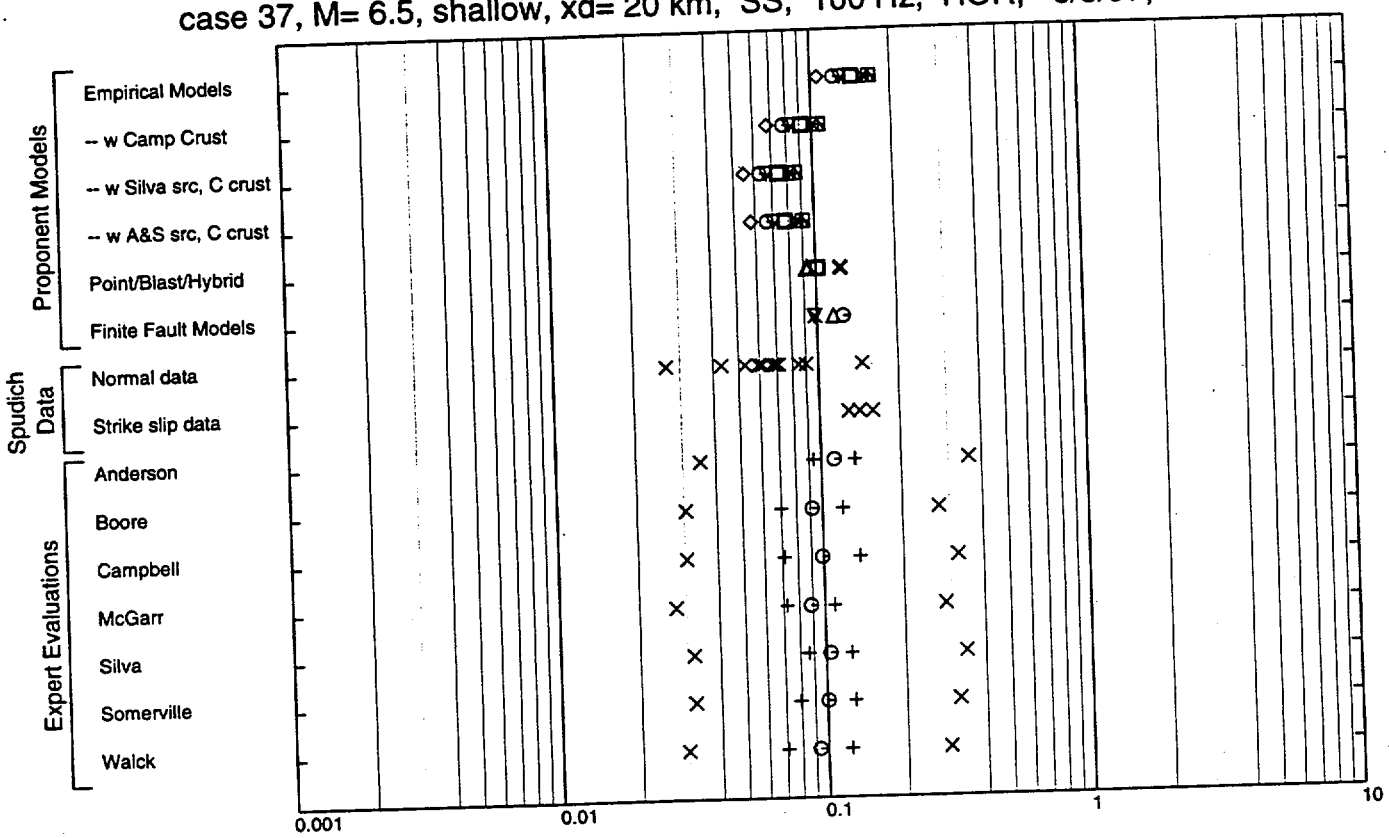
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



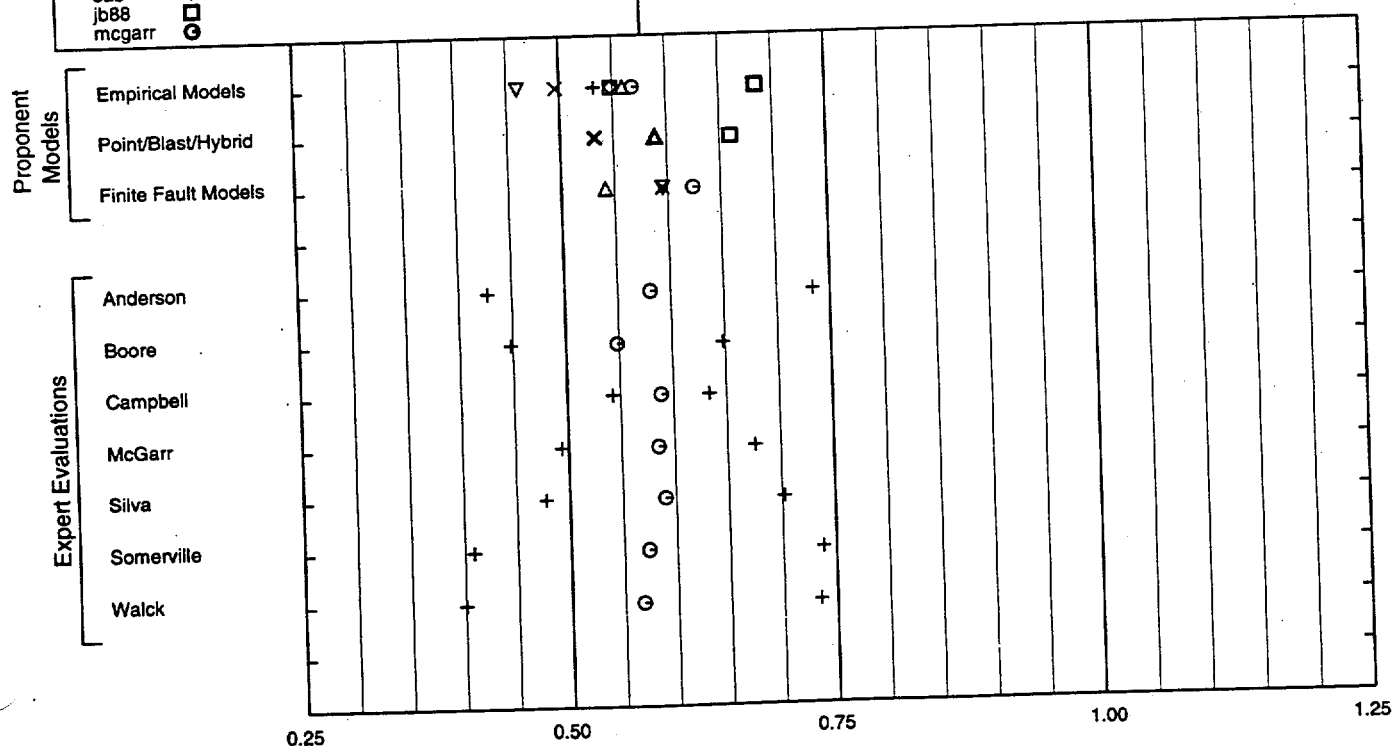
Aleatory Sigma (LN units) w/ Comp Var.

case 37, M= 6.5, shallow, xd= 20 km, SS, 100 Hz, HOR, 6/5/97, Rev 1

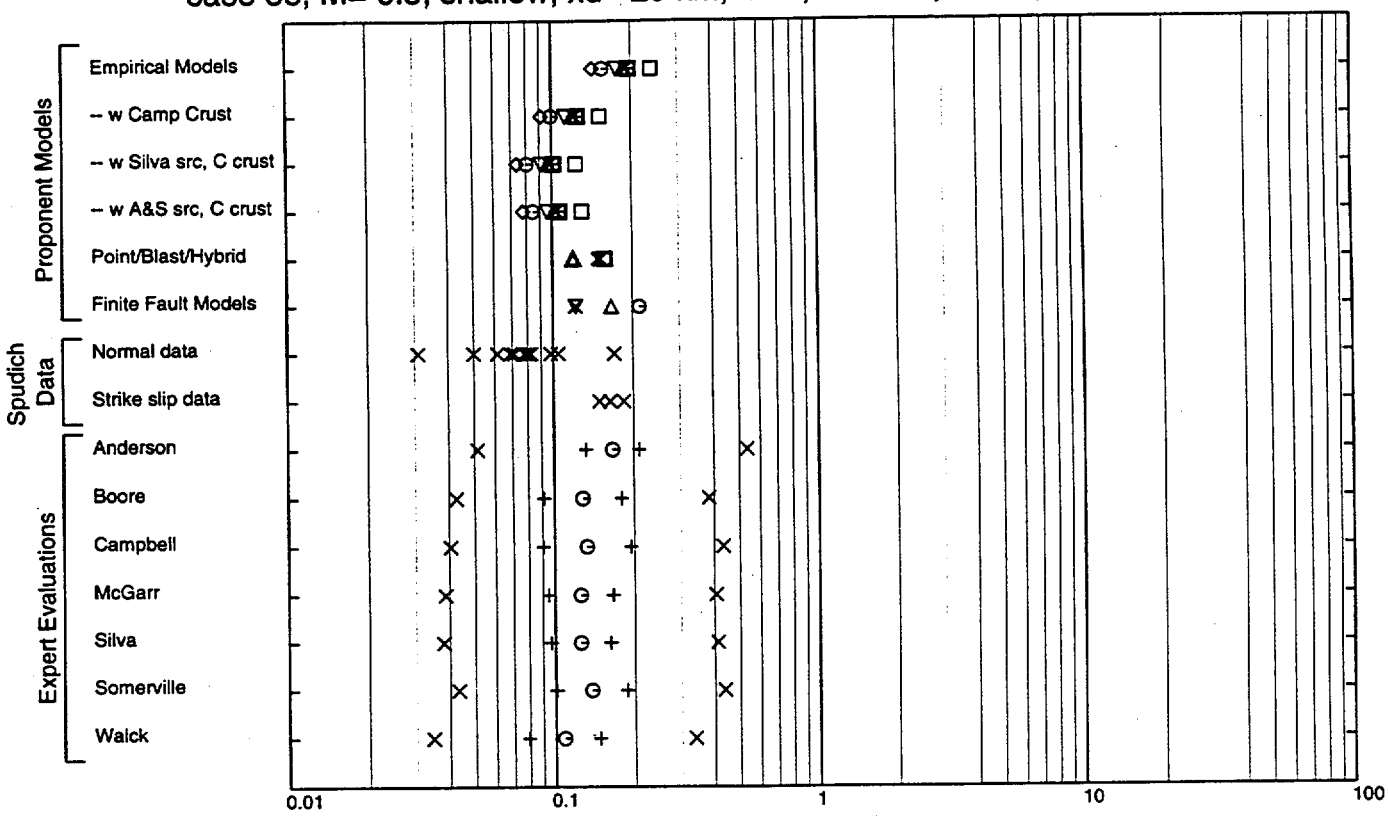


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



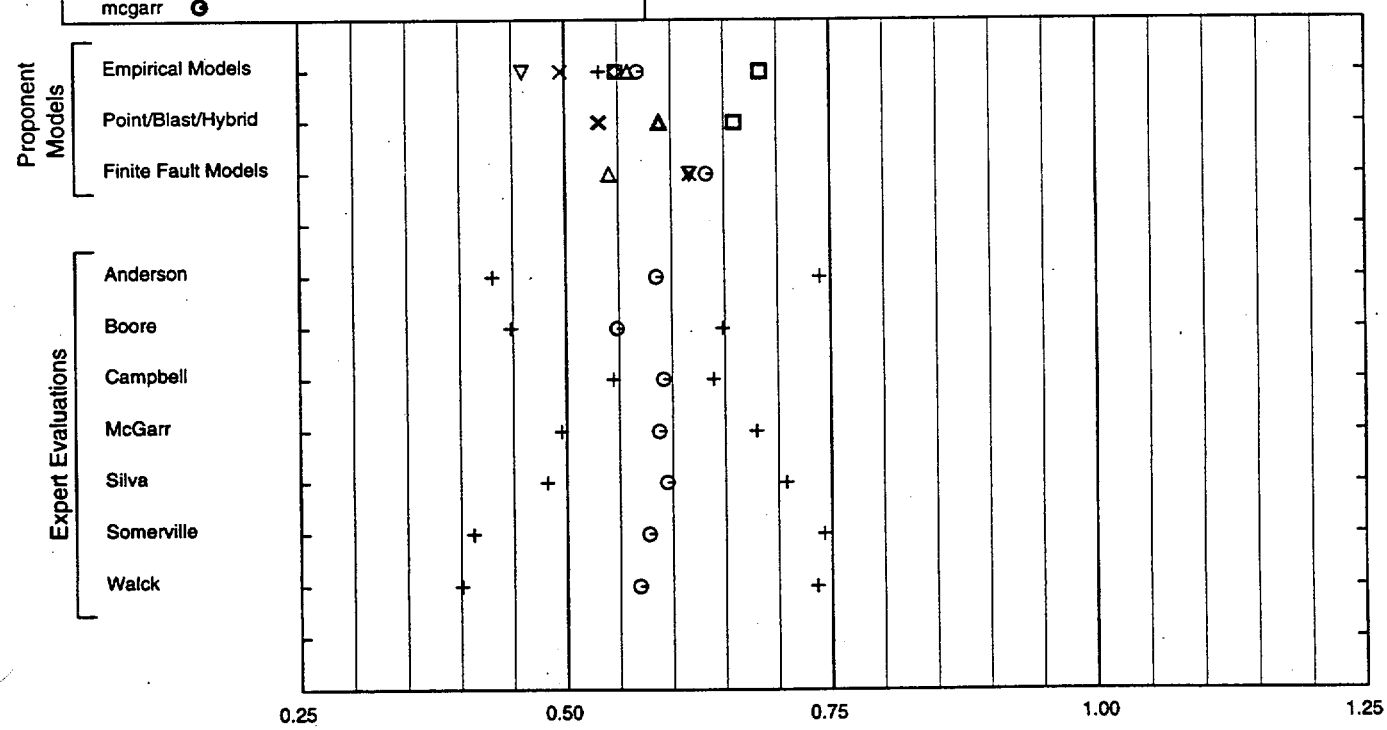
case 38, M= 6.5, shallow, xd= 20 km, HW, 100 Hz, HOR, 6/5/97, Rev 1



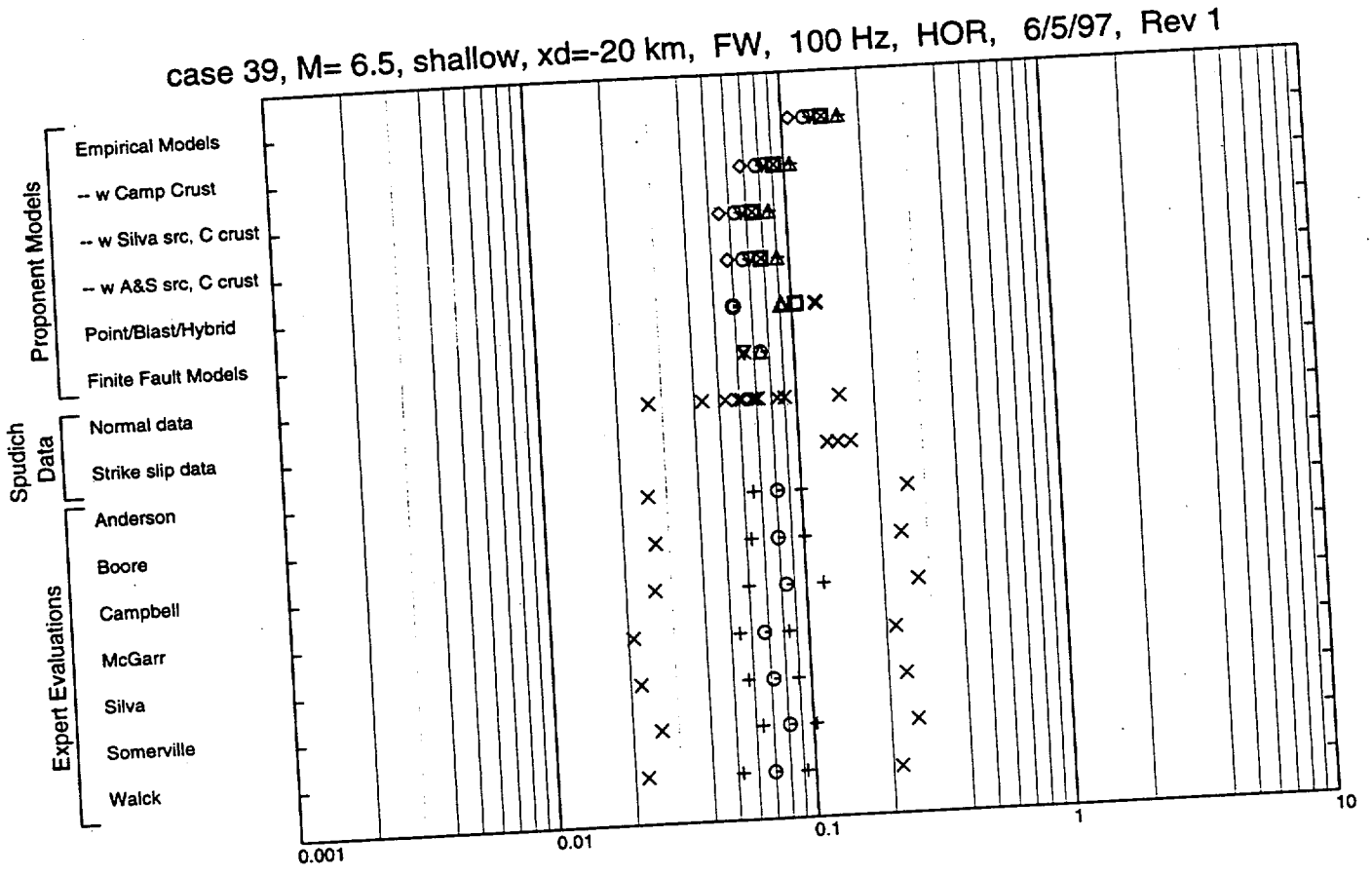
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

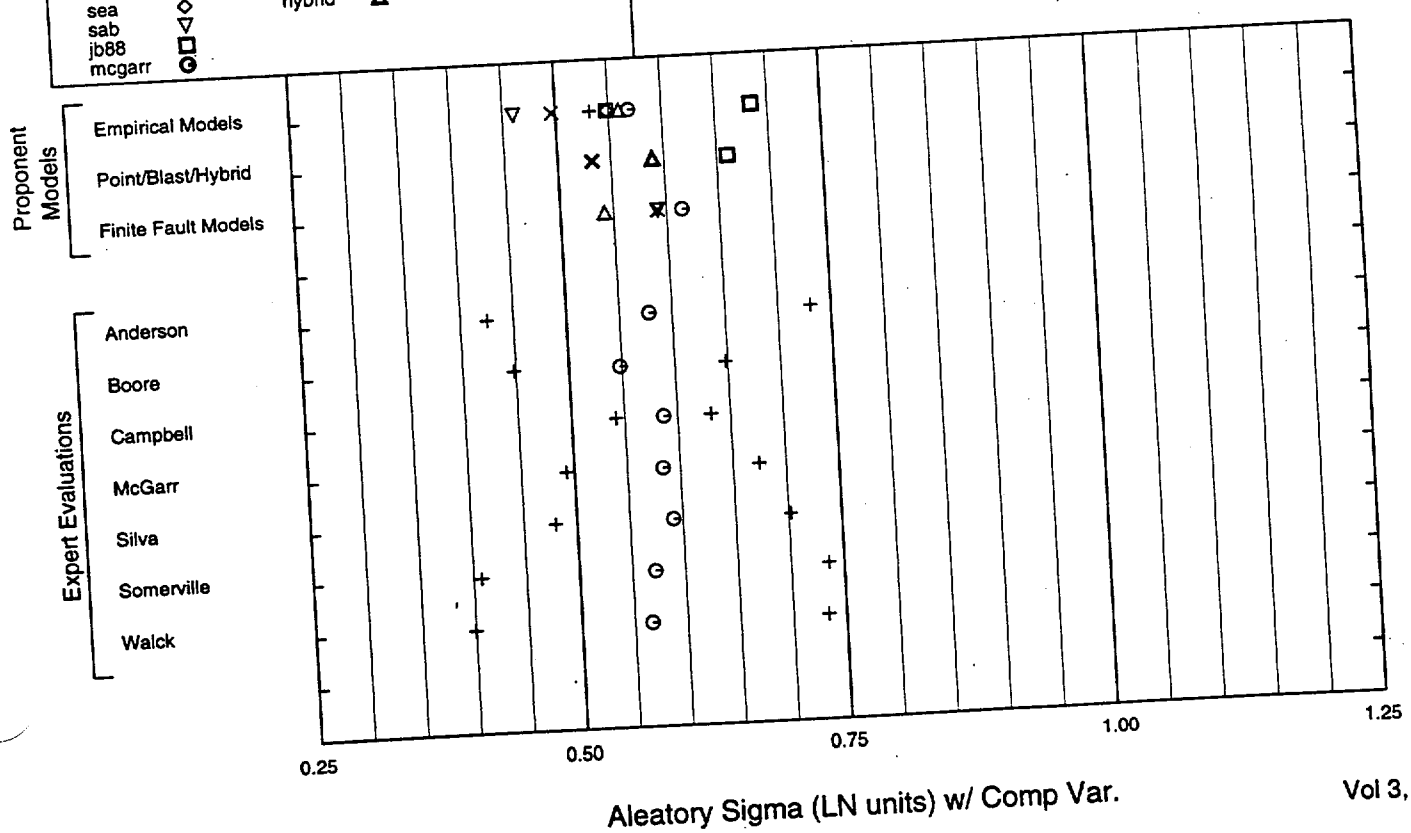


Aleatory Sigma (LN units) w/ Comp Var.

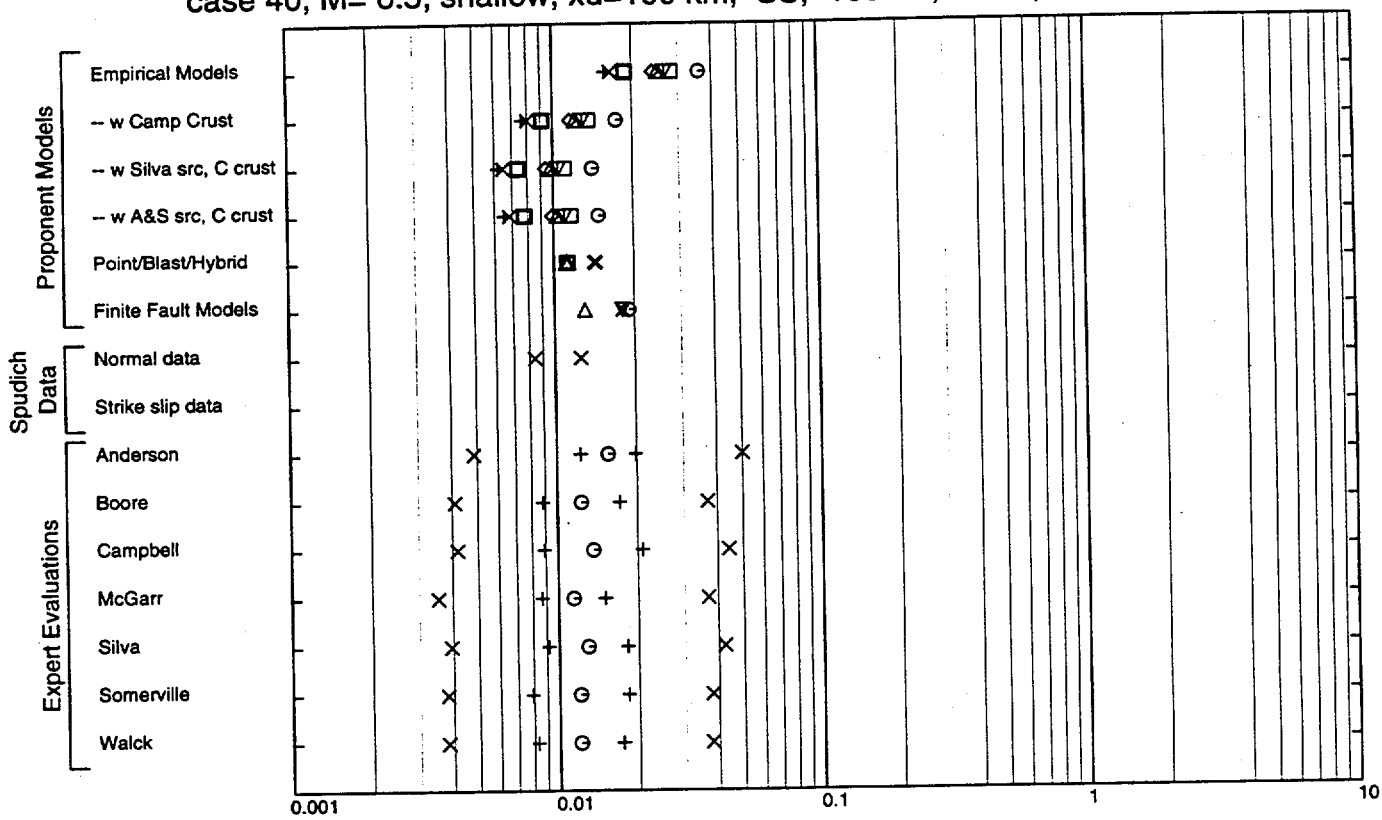


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



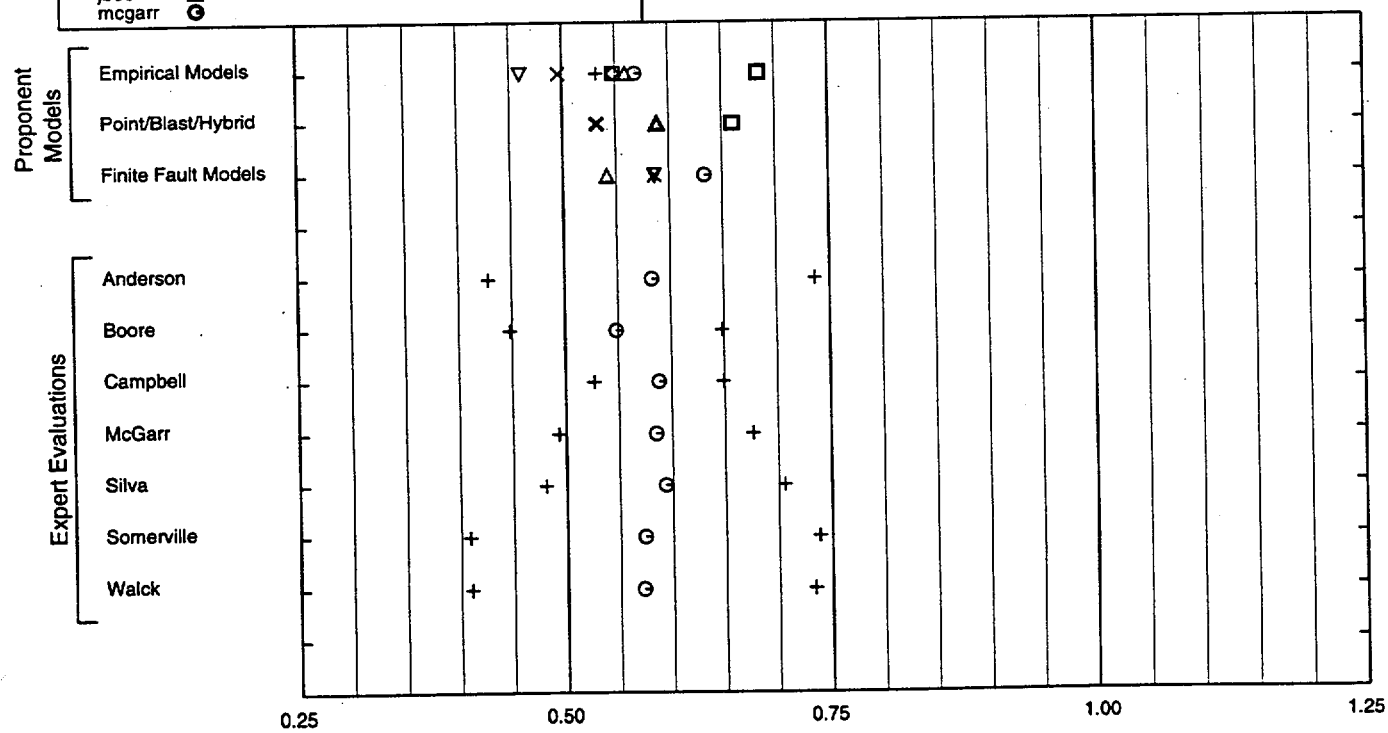
case 40, M= 6.5, shallow, xd=100 km, SS, 100 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

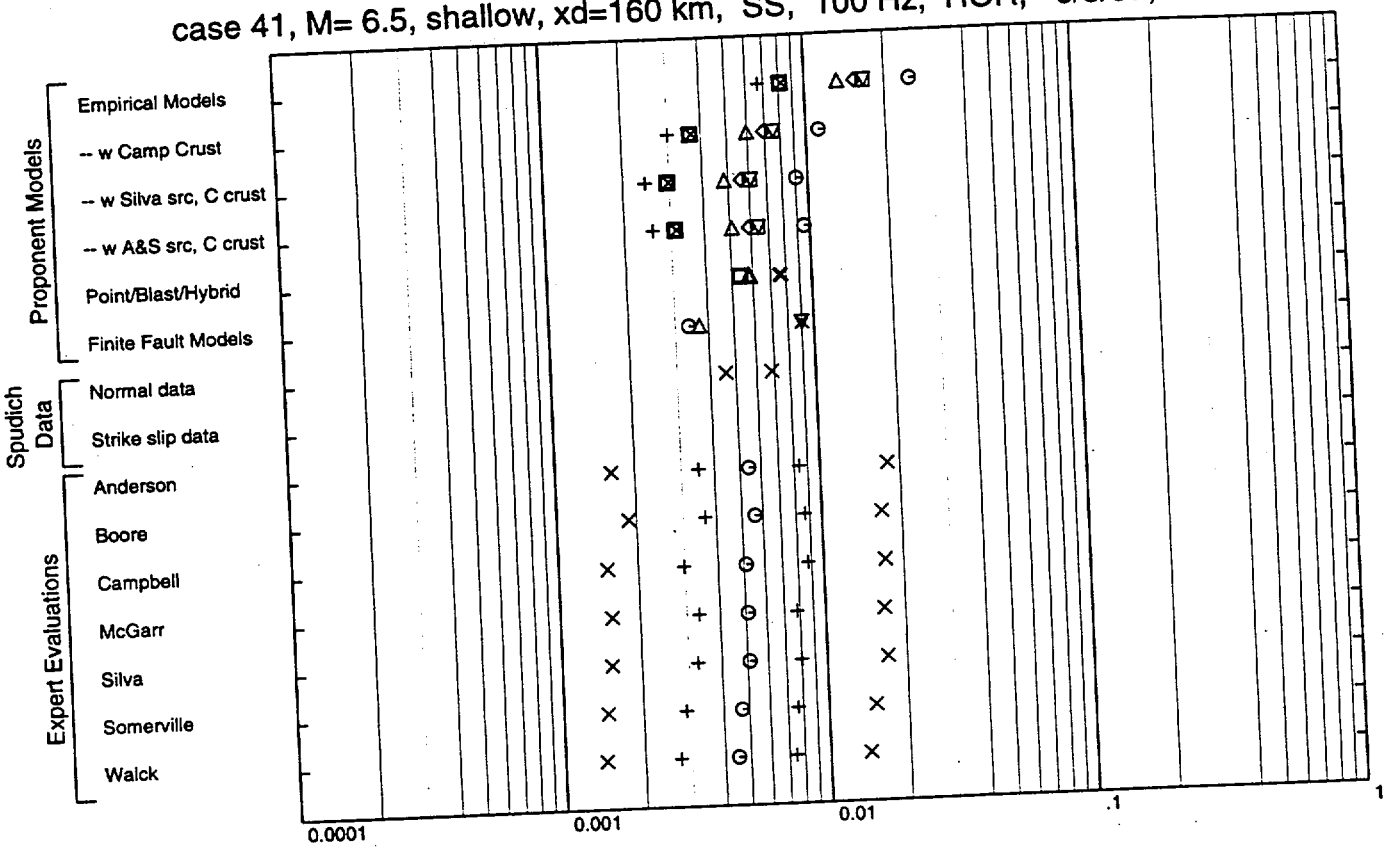
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



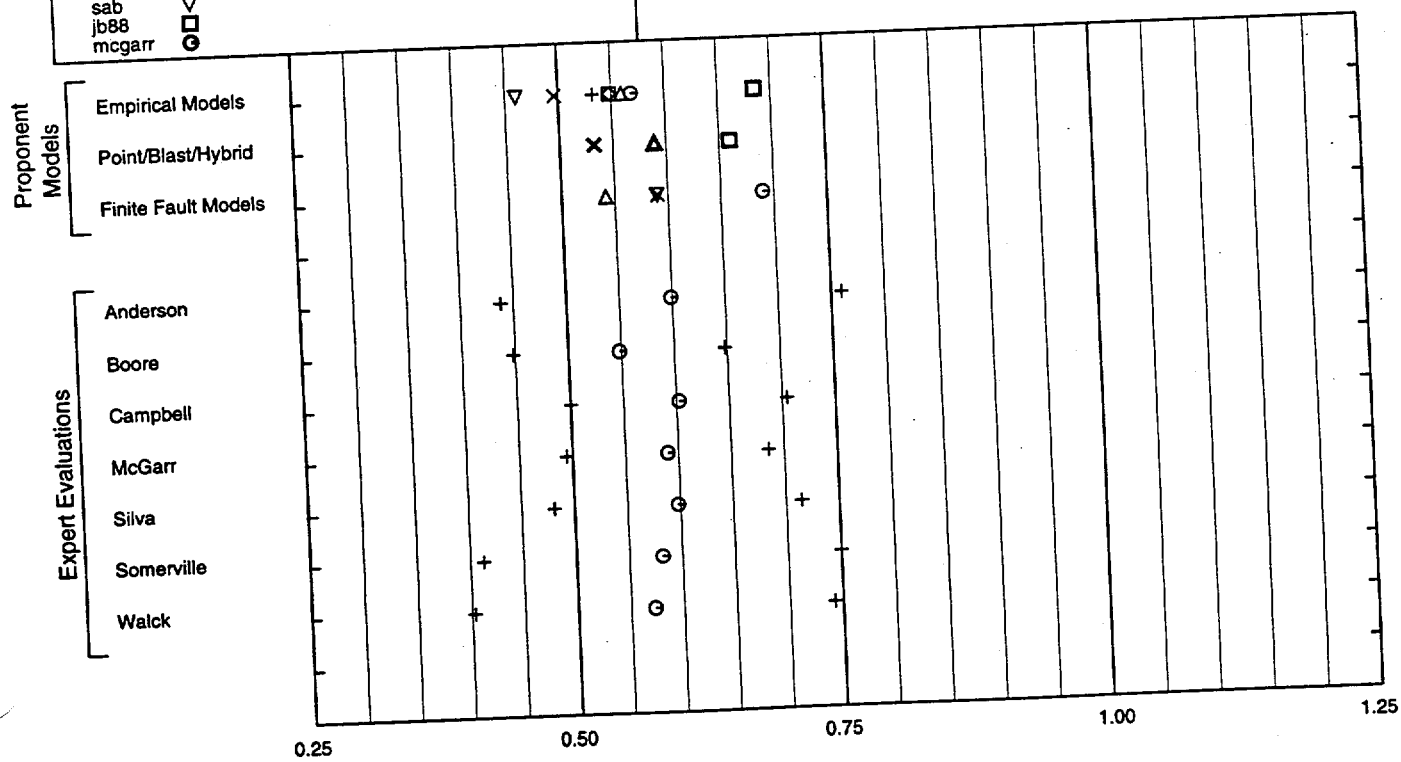
Aleatory Sigma (LN units) w/ Comp Var.

case 41, M= 6.5, shallow, xd=160 km, SS, 100 Hz, HOR, 6/5/97, Rev 1

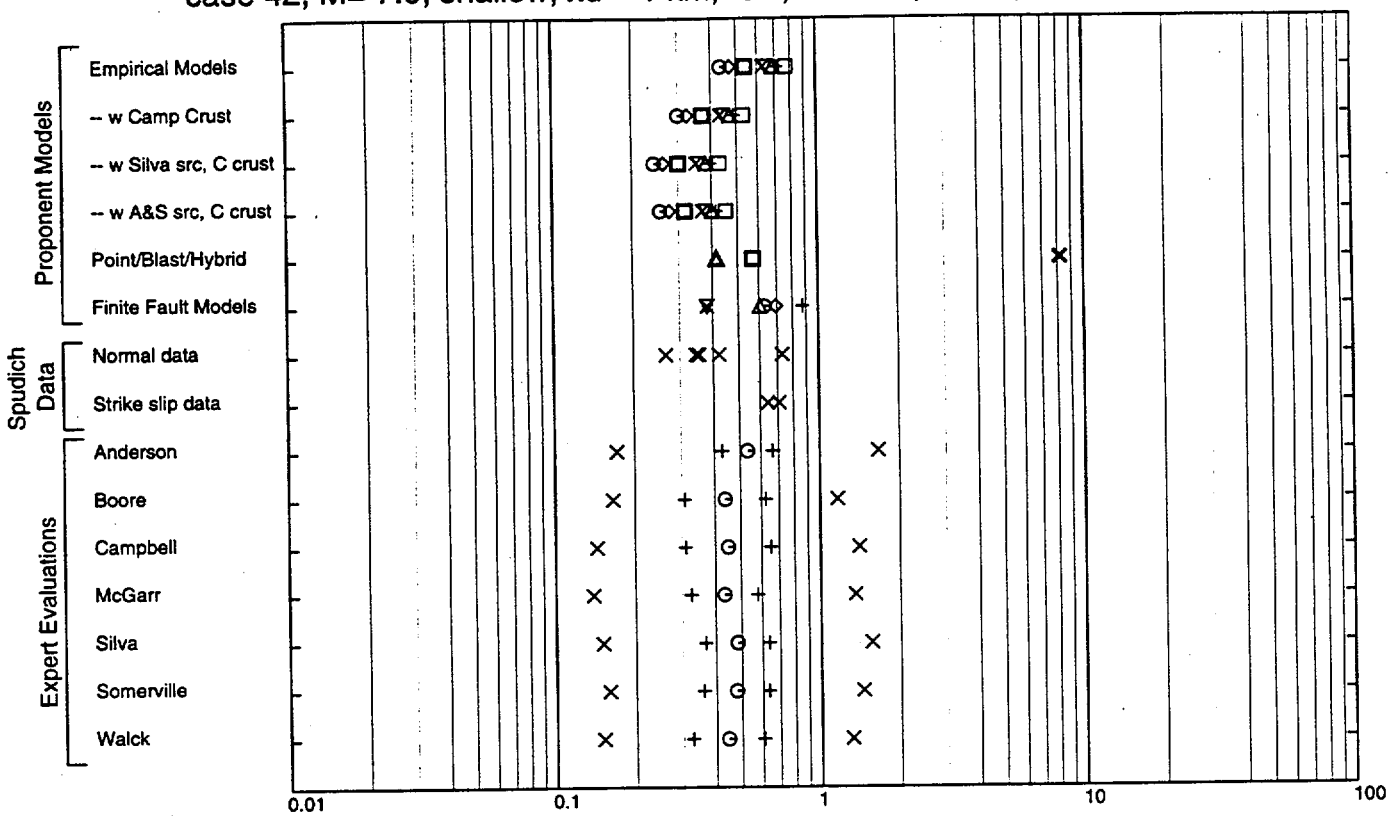


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



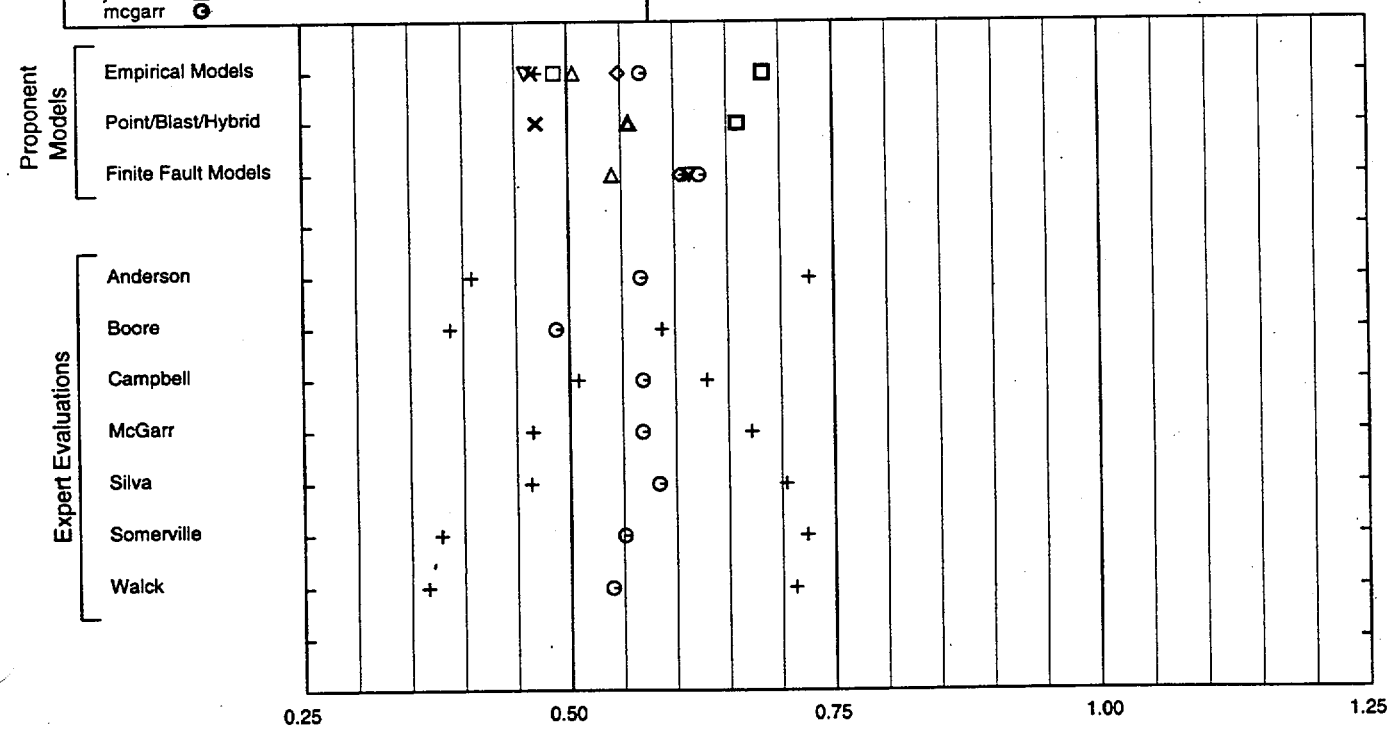
case 42, M= 7.0, shallow, xd= 1 km, SS, 100 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

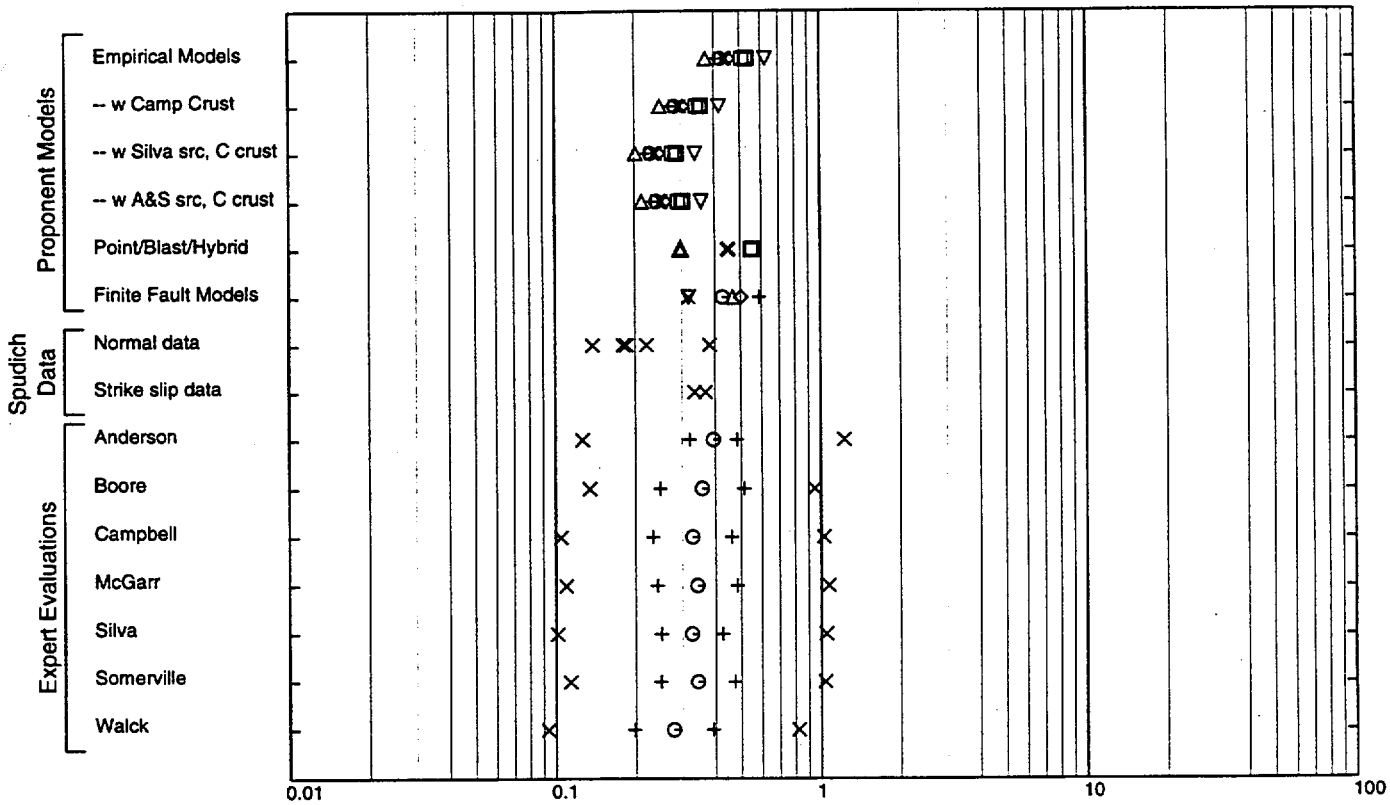
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

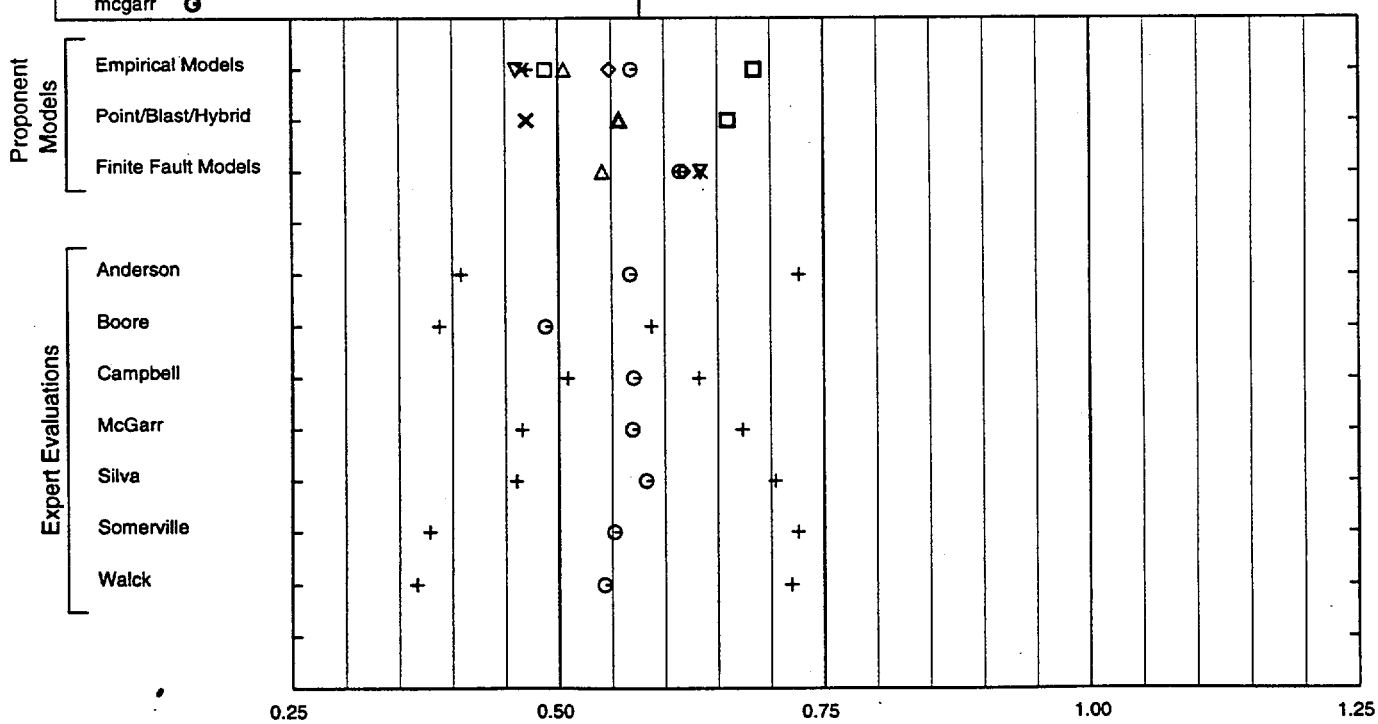
case 43, M= 7.0, shallow, xd= 10 km, HW, 100 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

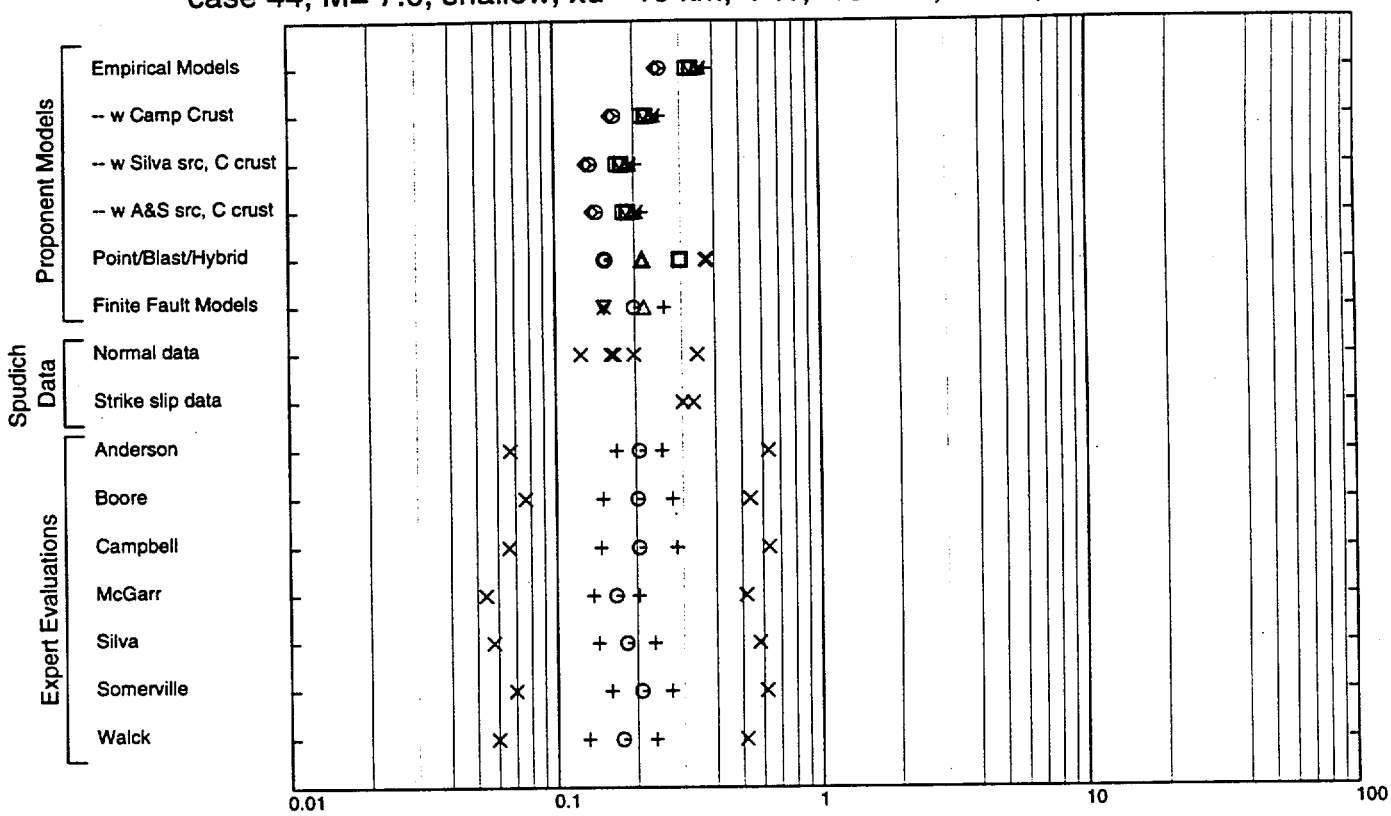
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

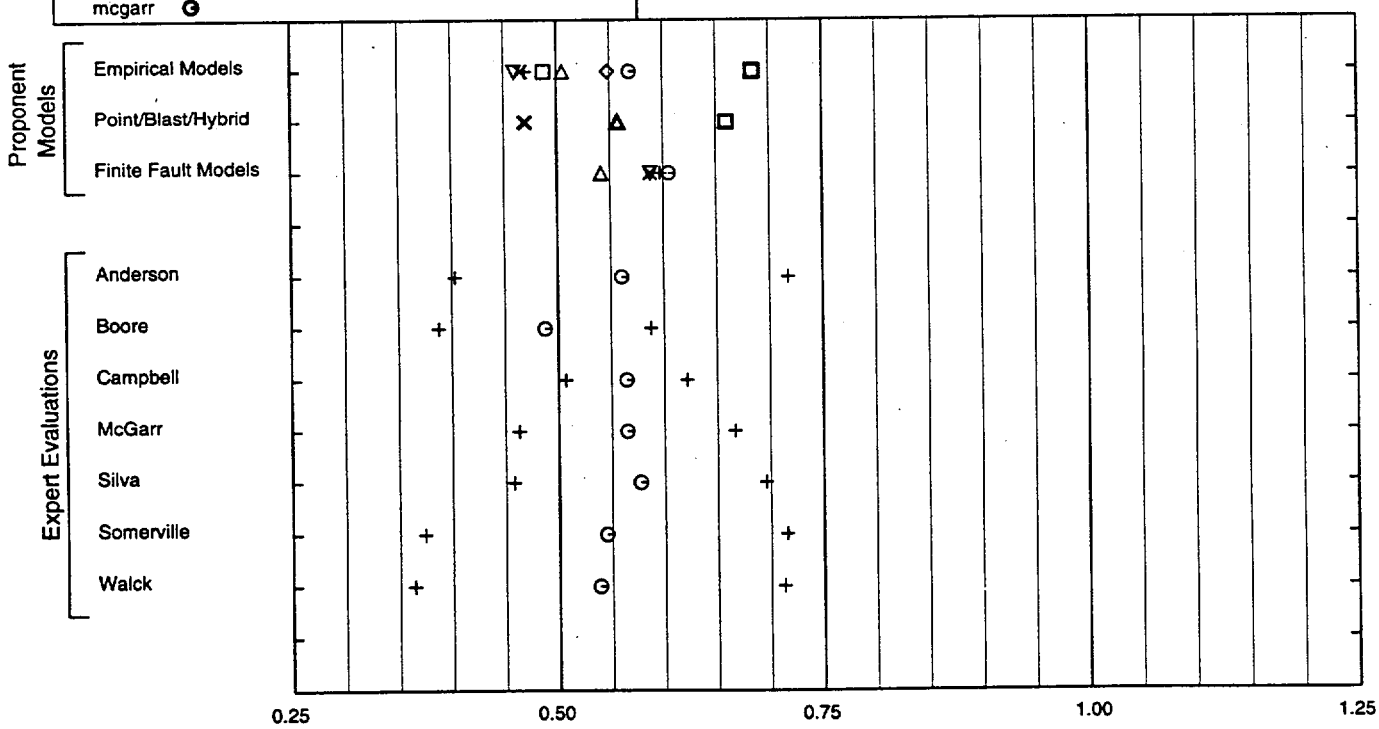
case 44, M= 7.0, shallow, xd=-10 km, FW, 100 Hz, HOR, 6/5/97, Rev 1



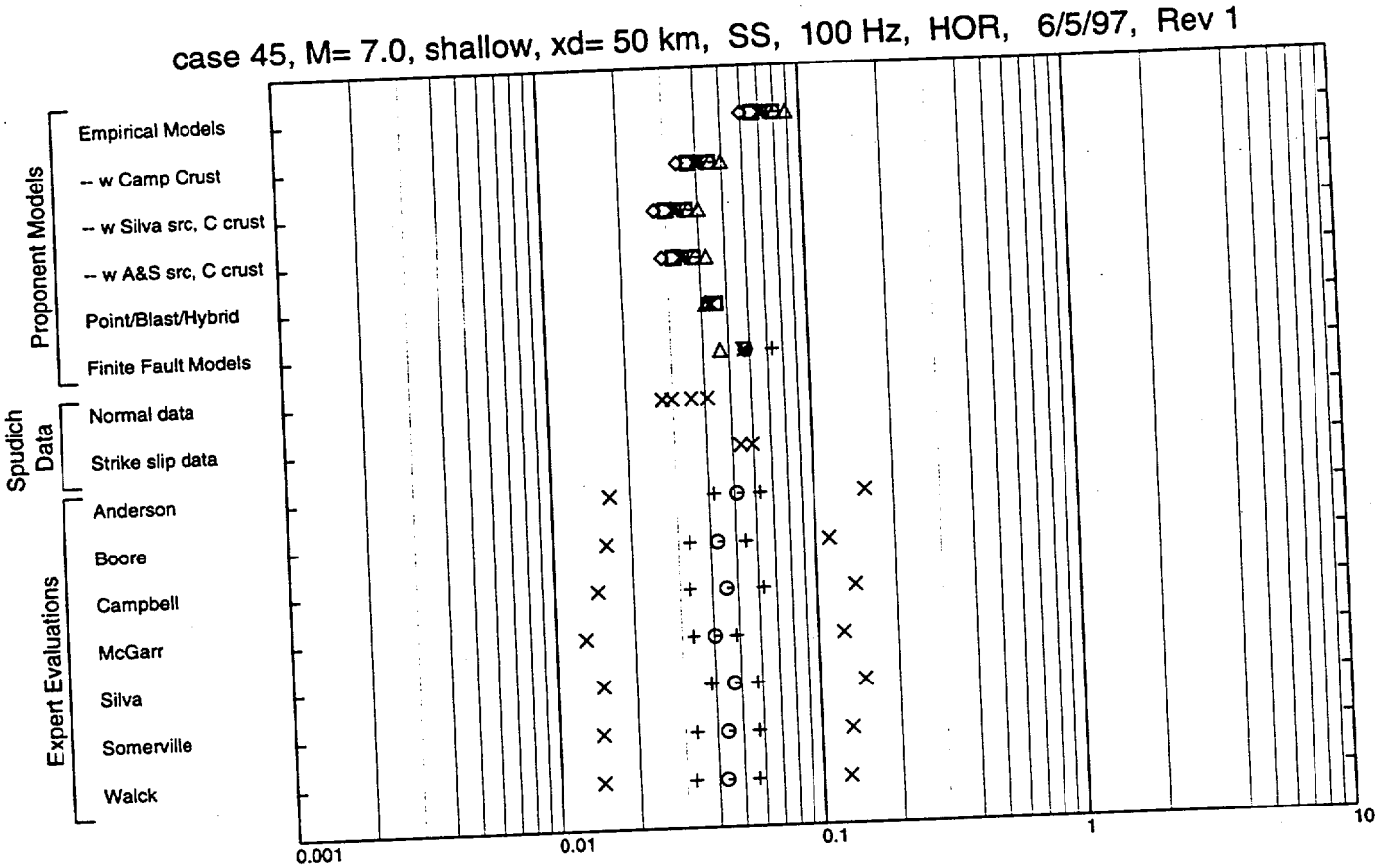
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

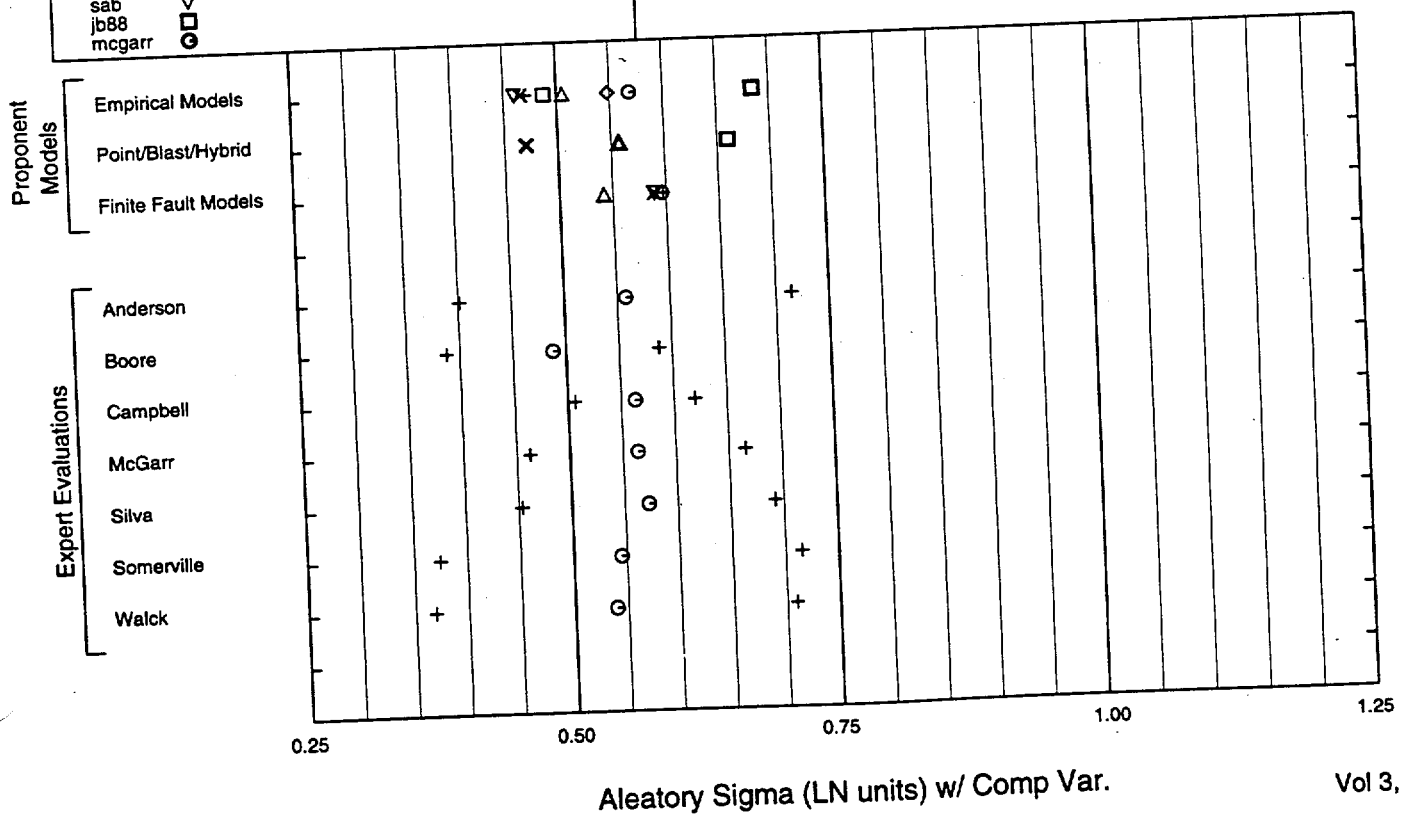


Aleatory Sigma (LN units) w/ Comp Var.

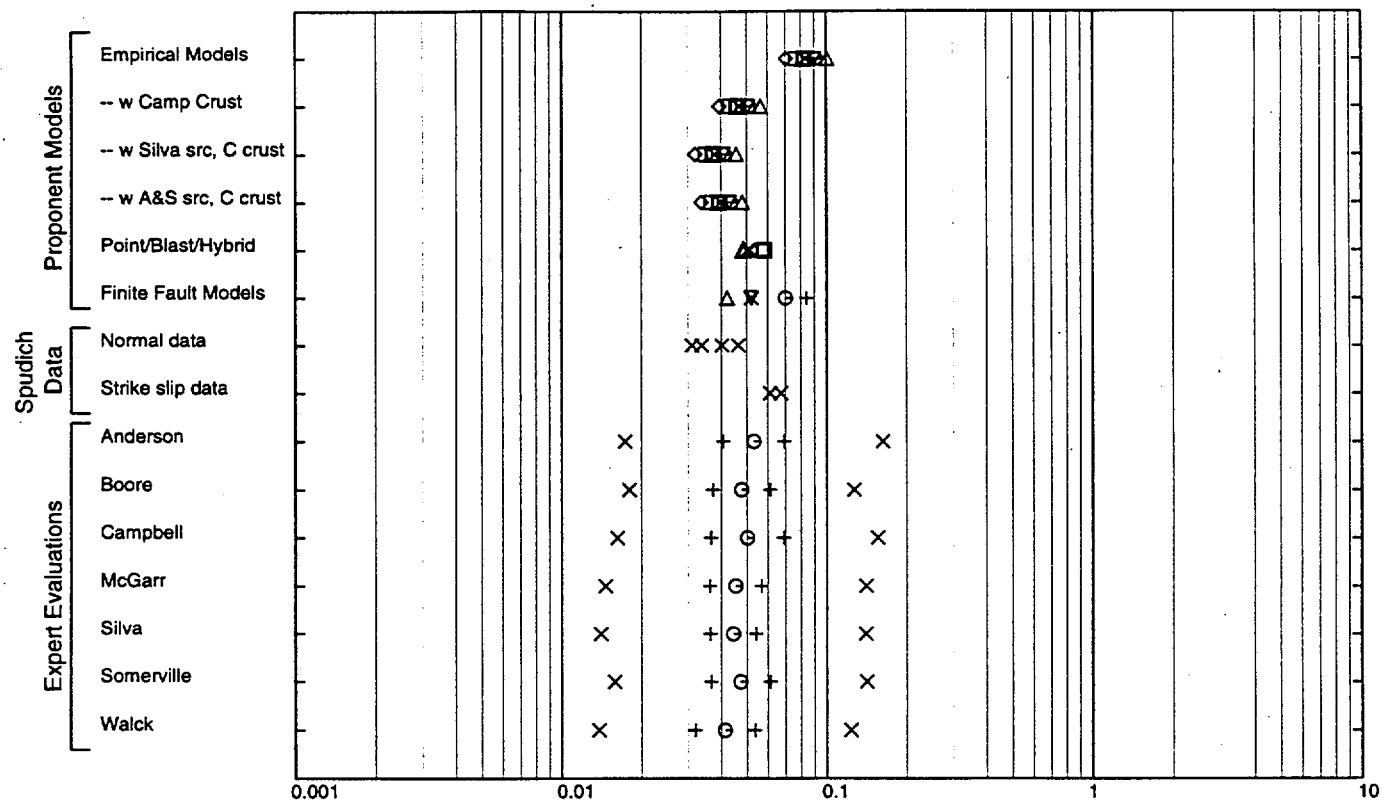


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



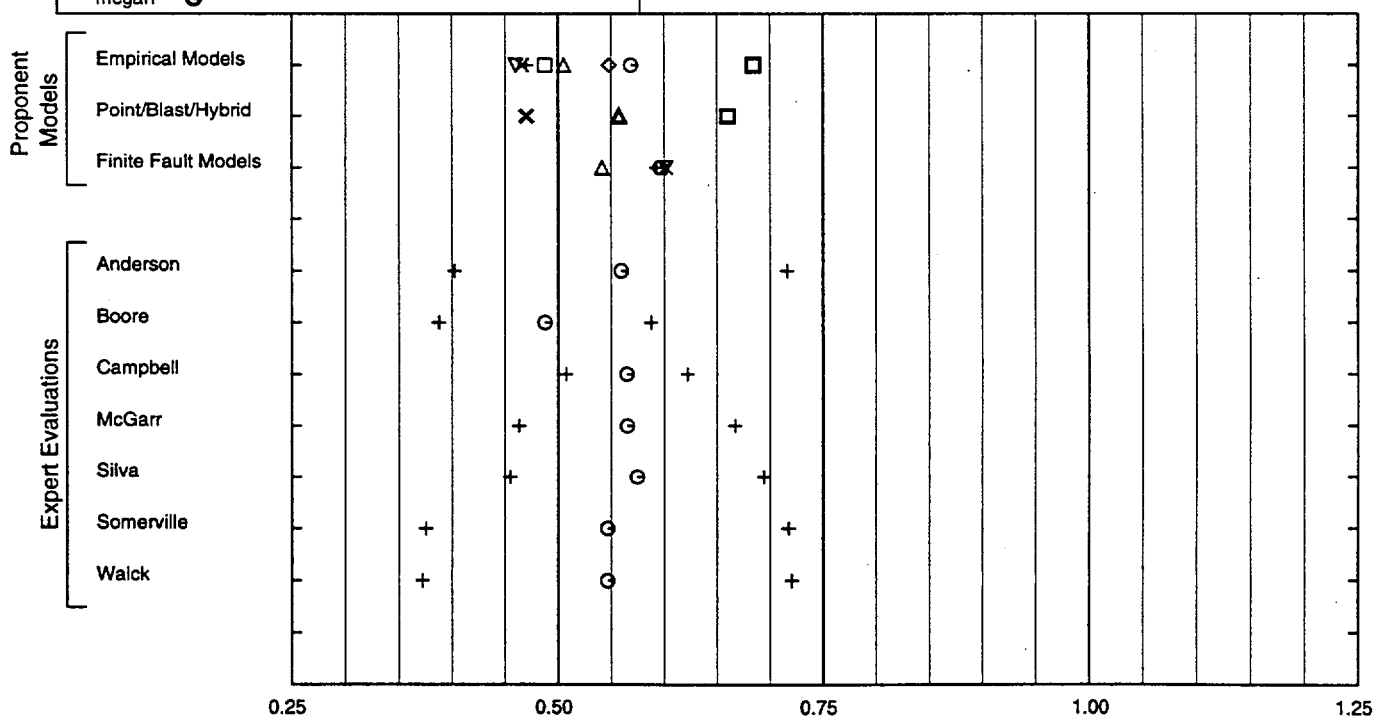
case 46, M= 7.0, shallow, xd= 50 km, HW, 100 Hz, HOR, 6/5/97, Rev 1



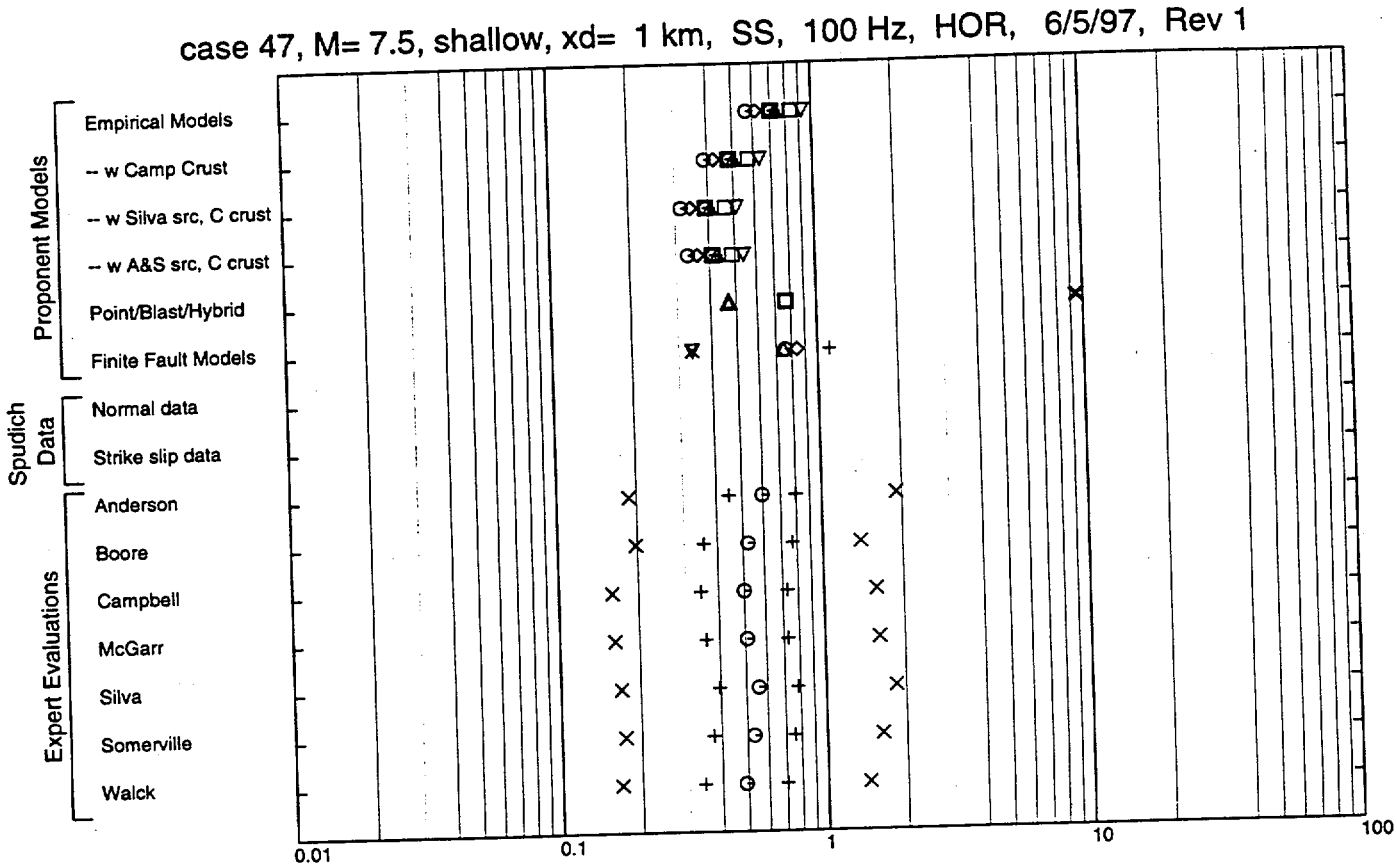
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

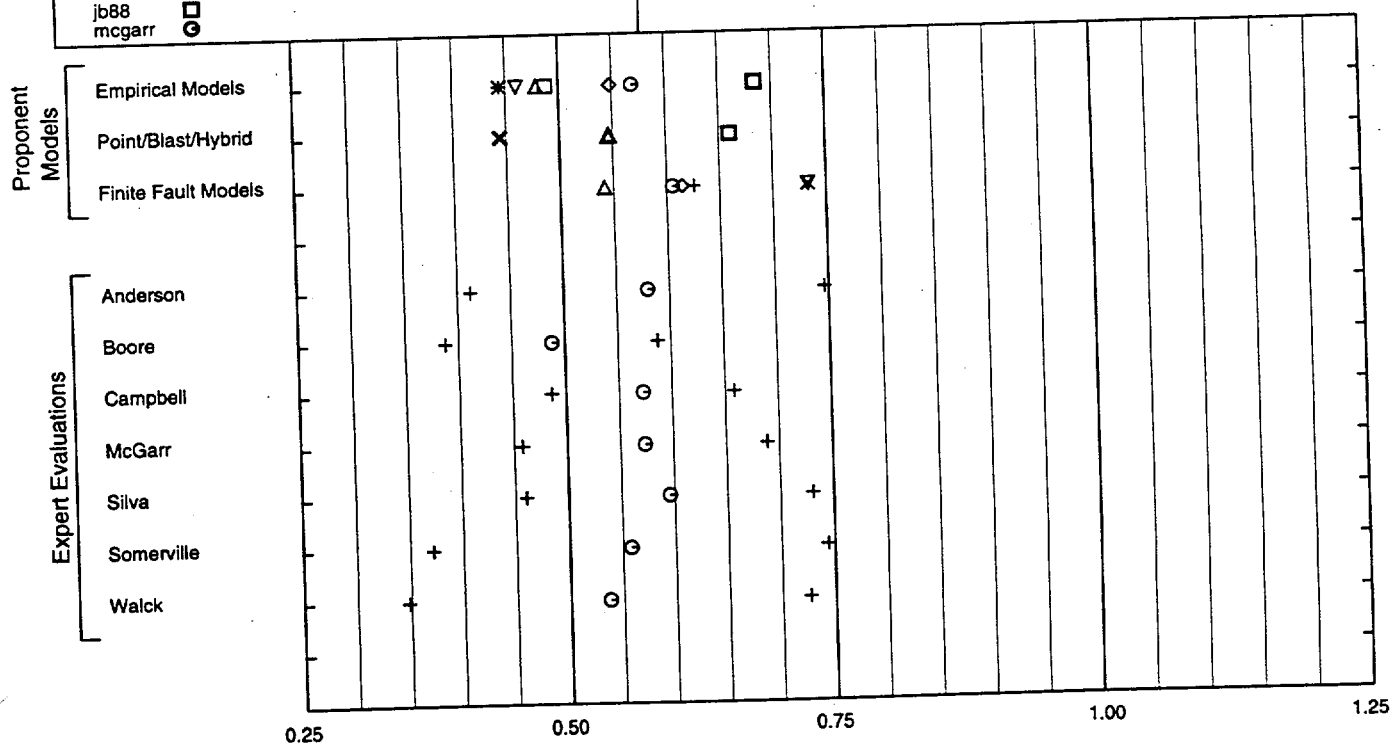


Aleatory Sigma (LN units) w/ Comp Var.

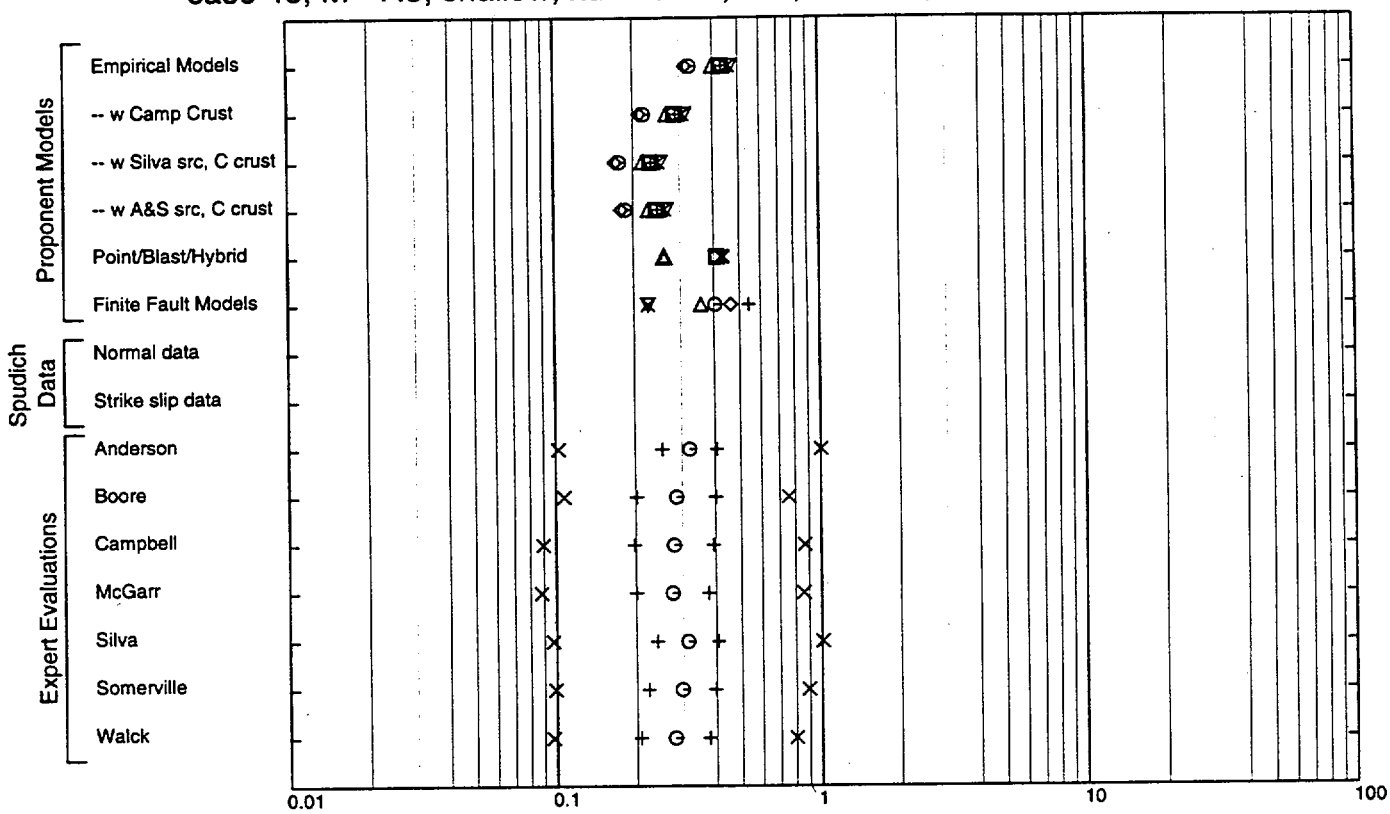


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



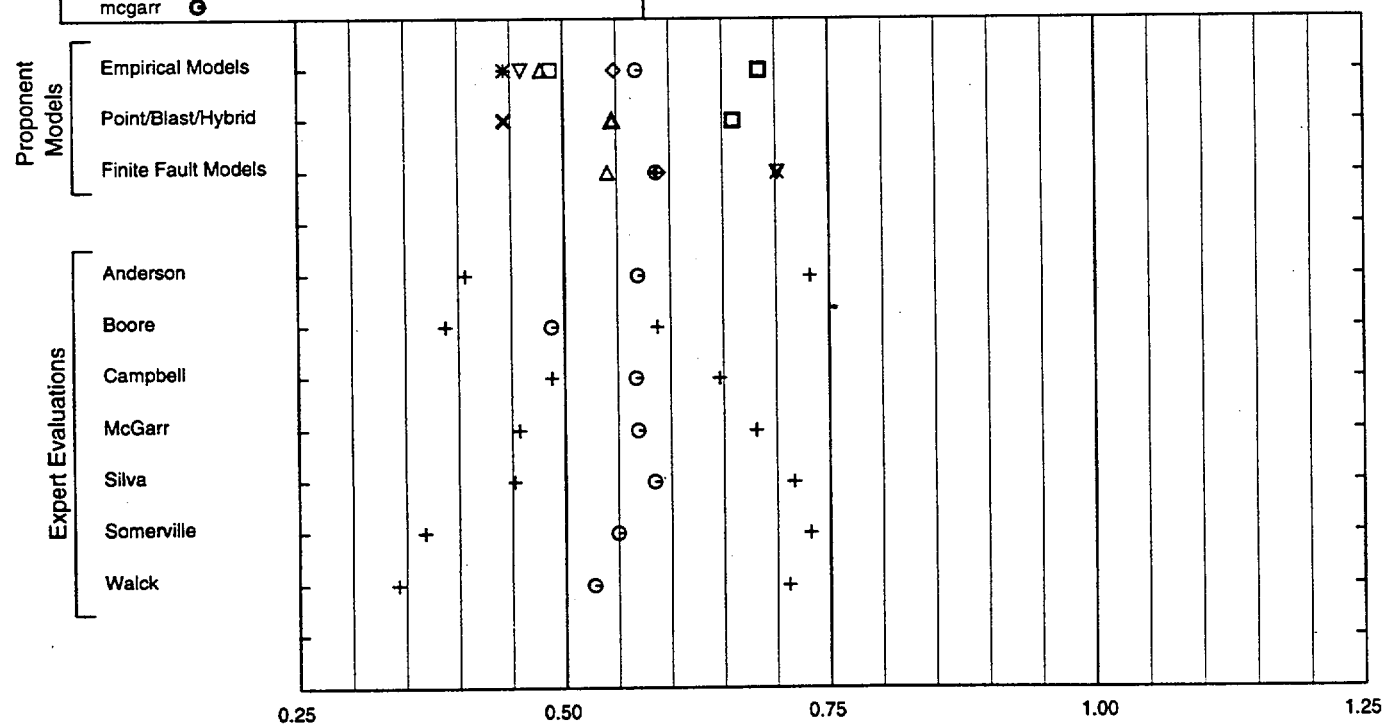
case 48, M= 7.5, shallow, xd= 10 km, SS, 100 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

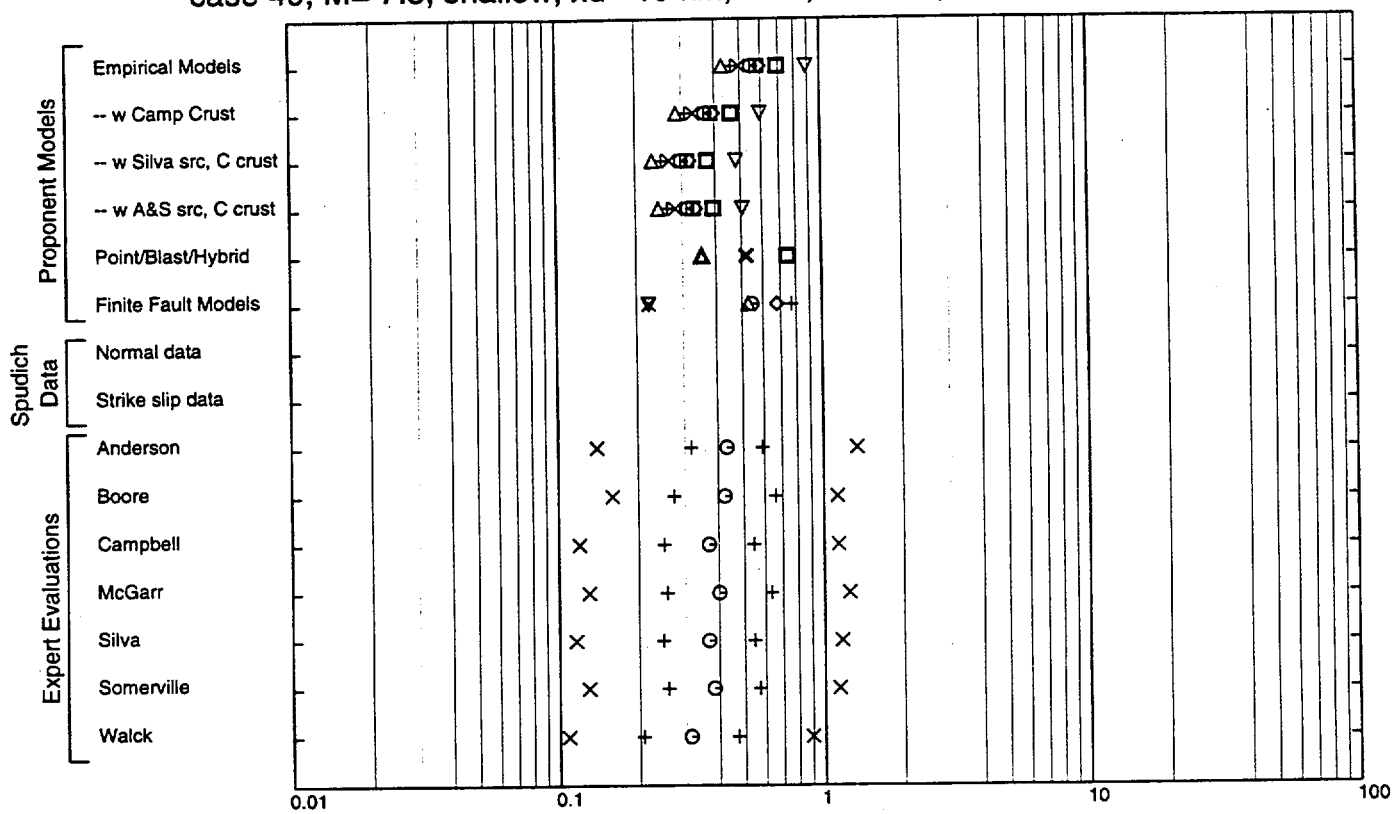
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

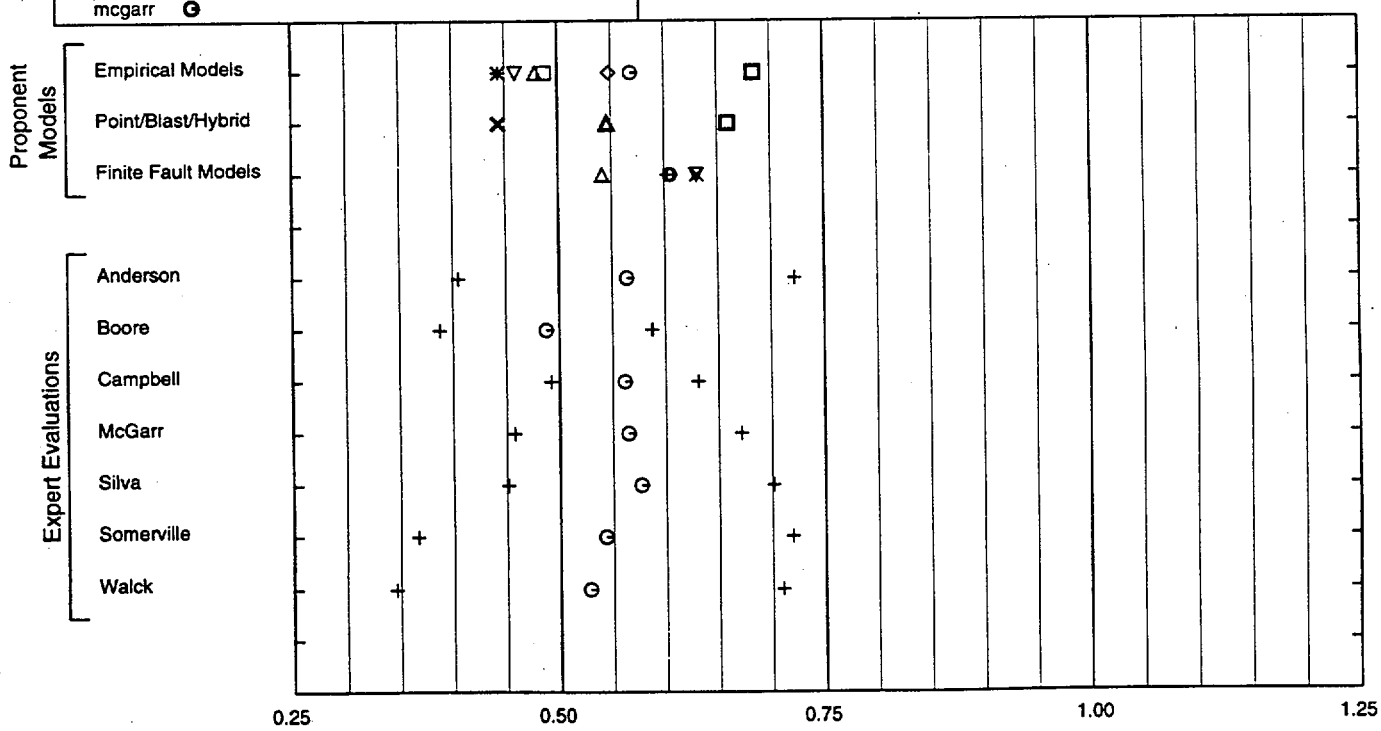
case 49, M= 7.5, shallow, xd= 10 km, HW, 100 Hz, HOR, 6/5/97, Rev 1



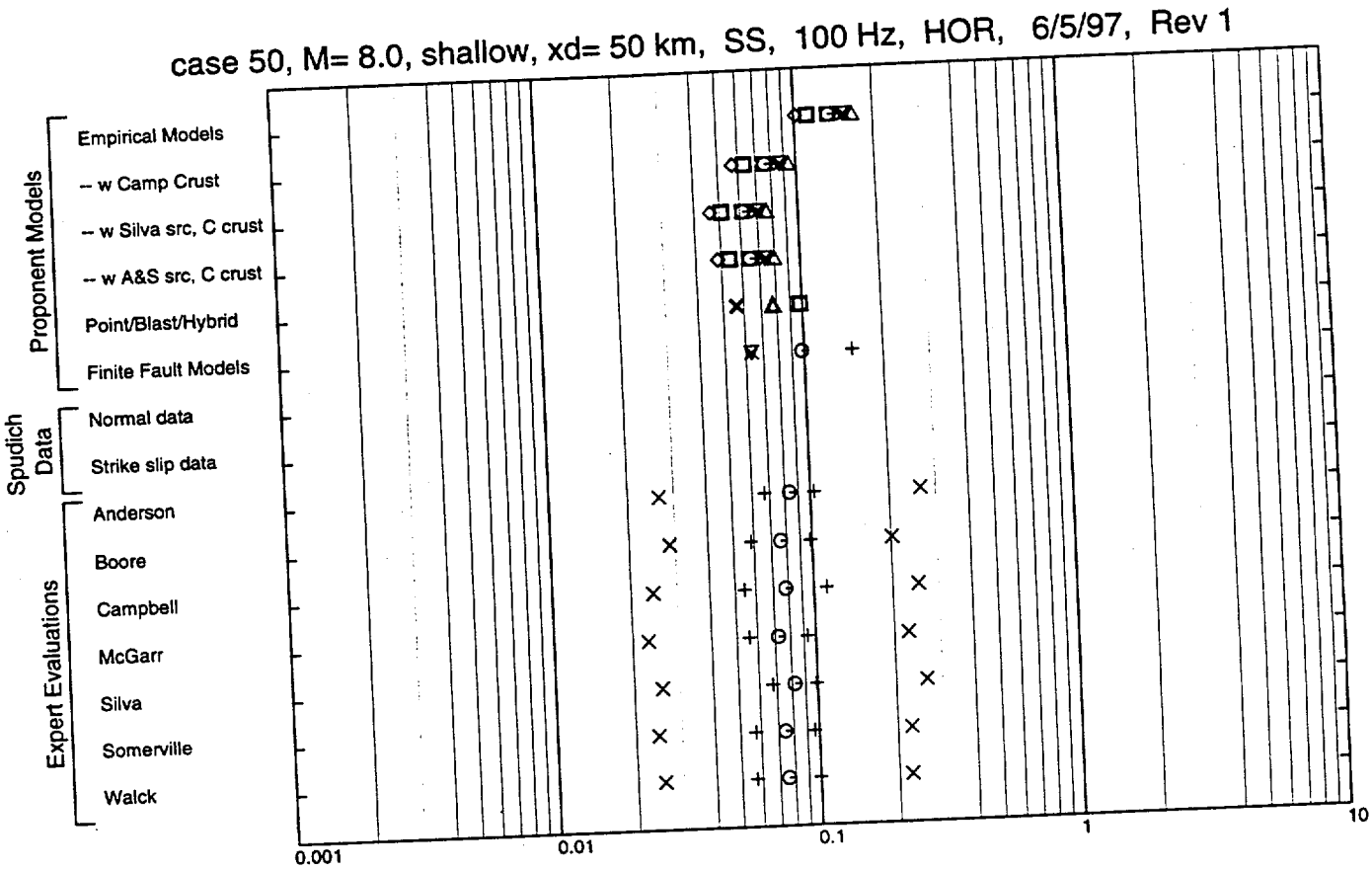
Spectral Acceleration (g)

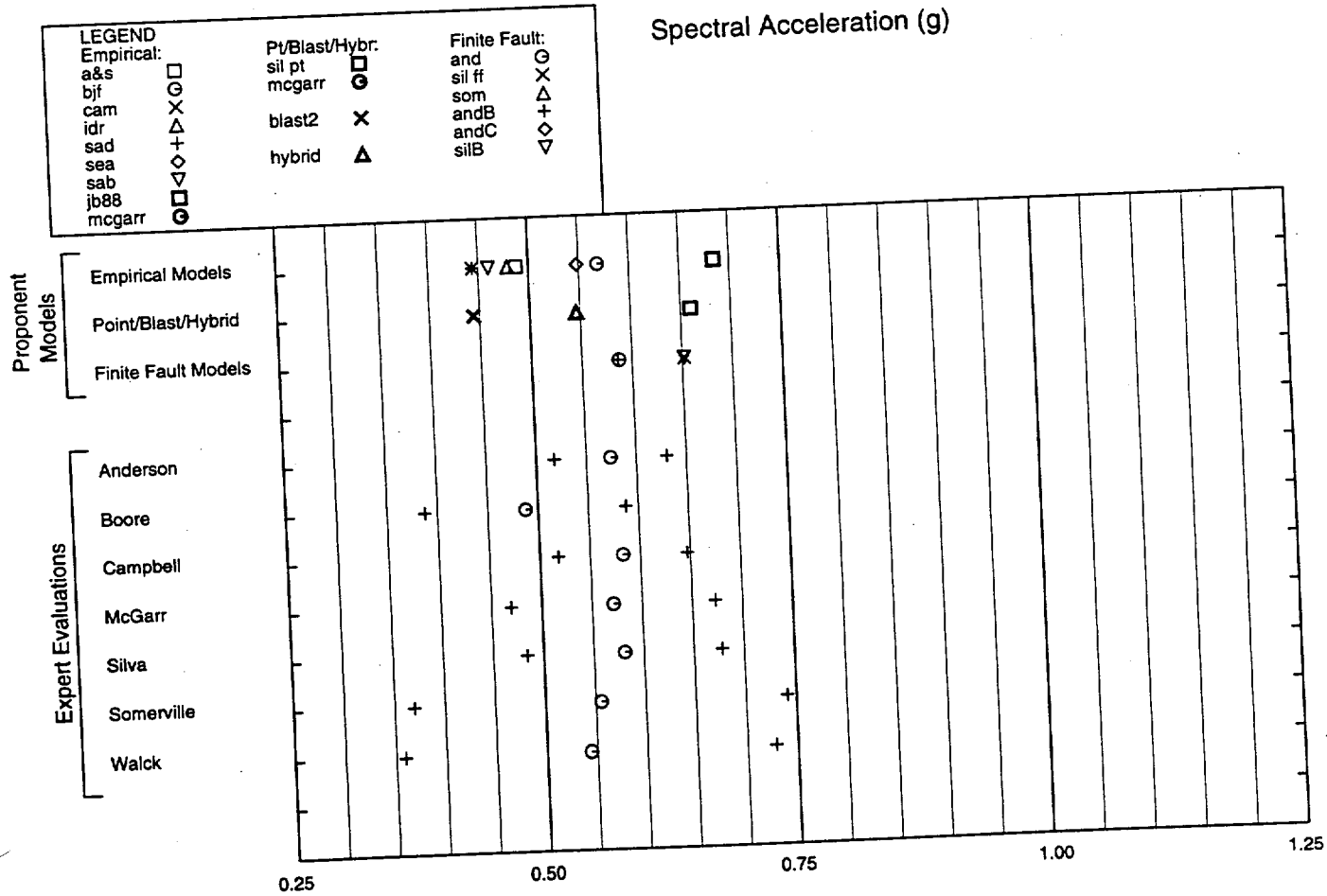
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

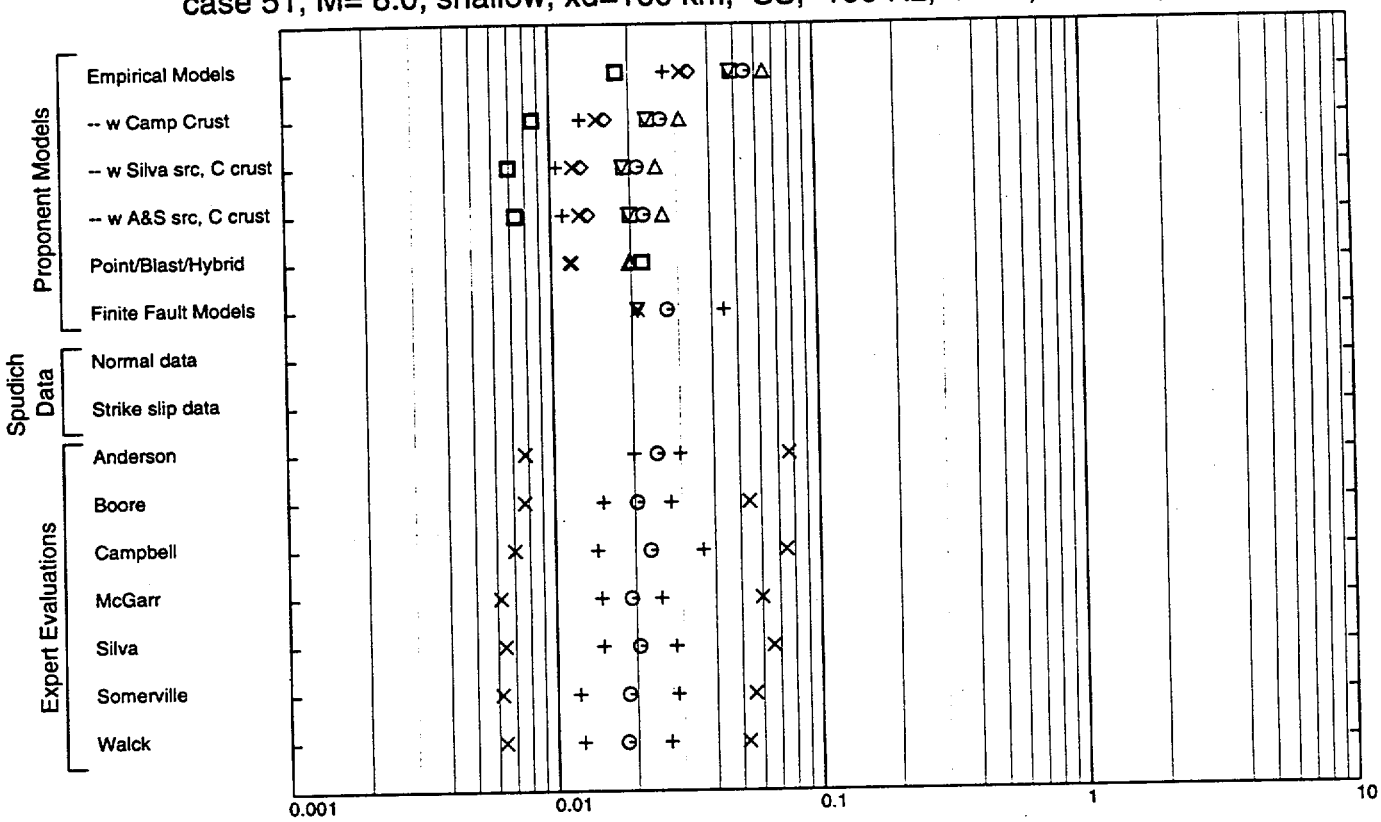


Aleatory Sigma (LN units) w/ Comp Var.


case 50, M= 8.0, shallow, xd= 50 km, SS, 100 Hz, HOR, 6/5/97, Rev 1
Proponent Models
Empirical Models
-- w Camp Crust
-- w Silva src, C crust
-- w A&S src, C crust
Point/Blast/Hybrid
Finite Fault Models
Spudich Data
Normal data
Strike slip data
Expert Evaluations
Anderson
Boore
Campbell
McGarr
Silva
Somerville
Walck
0.001
0.01
0.1
1
10
Spectral Acceleration (g)


LEGEND
Empirical:
a&s
bjf
cam
idr
sad
sea
sab
jb88
mcgarr
Pt/Blast/Hybr:
sil pt
mcgarr
blast2
hybrid
Finite Fault:
and
sil ff
som
andB
andC
silB
Proponent Models
Empirical Models
Point/Blast/Hybrid
Finite Fault Models
Expert Evaluations
Anderson
Boore
Campbell
McGarr
Silva
Somerville
Walck
0.25
0.50
0.75
1.00
1.25
Aleatory Sigma (LN units) w/ Comp Var.

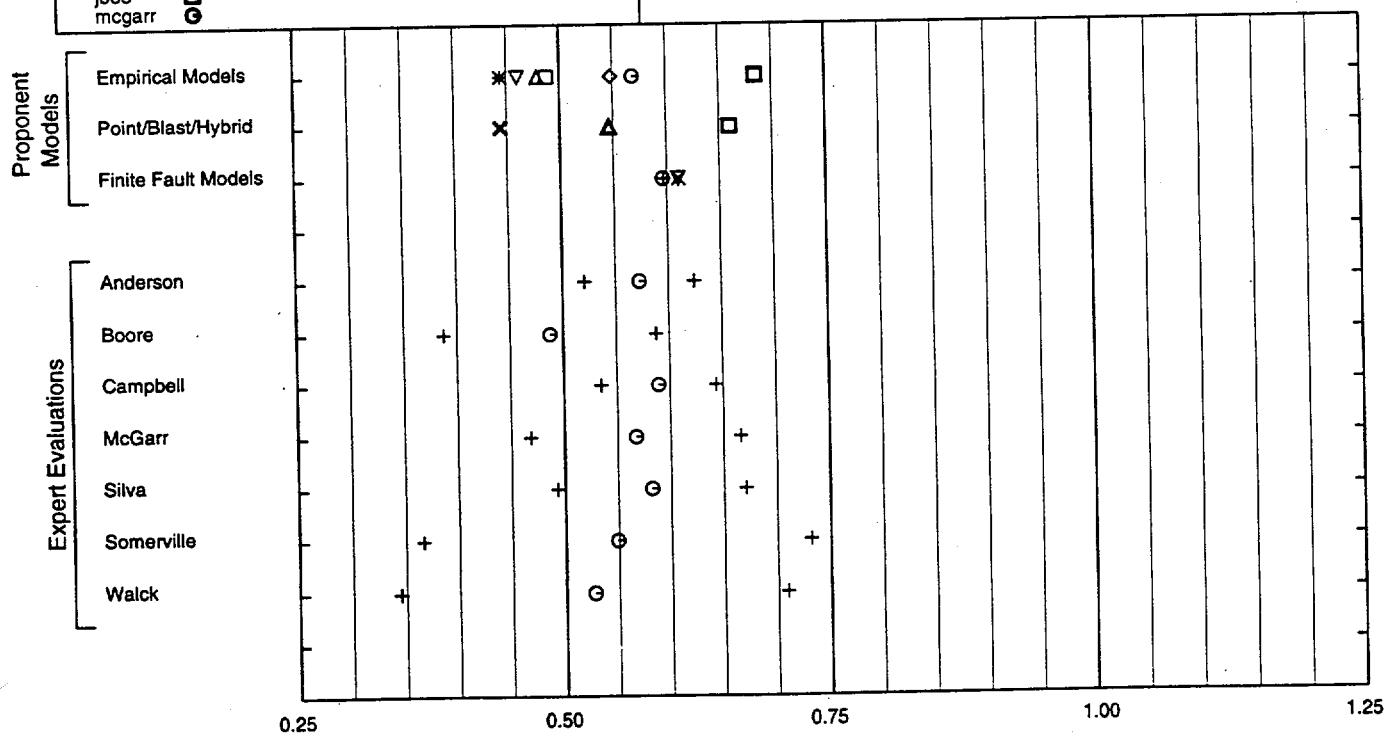
case 51, M= 8.0, shallow, xd=160 km, SS, 100 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

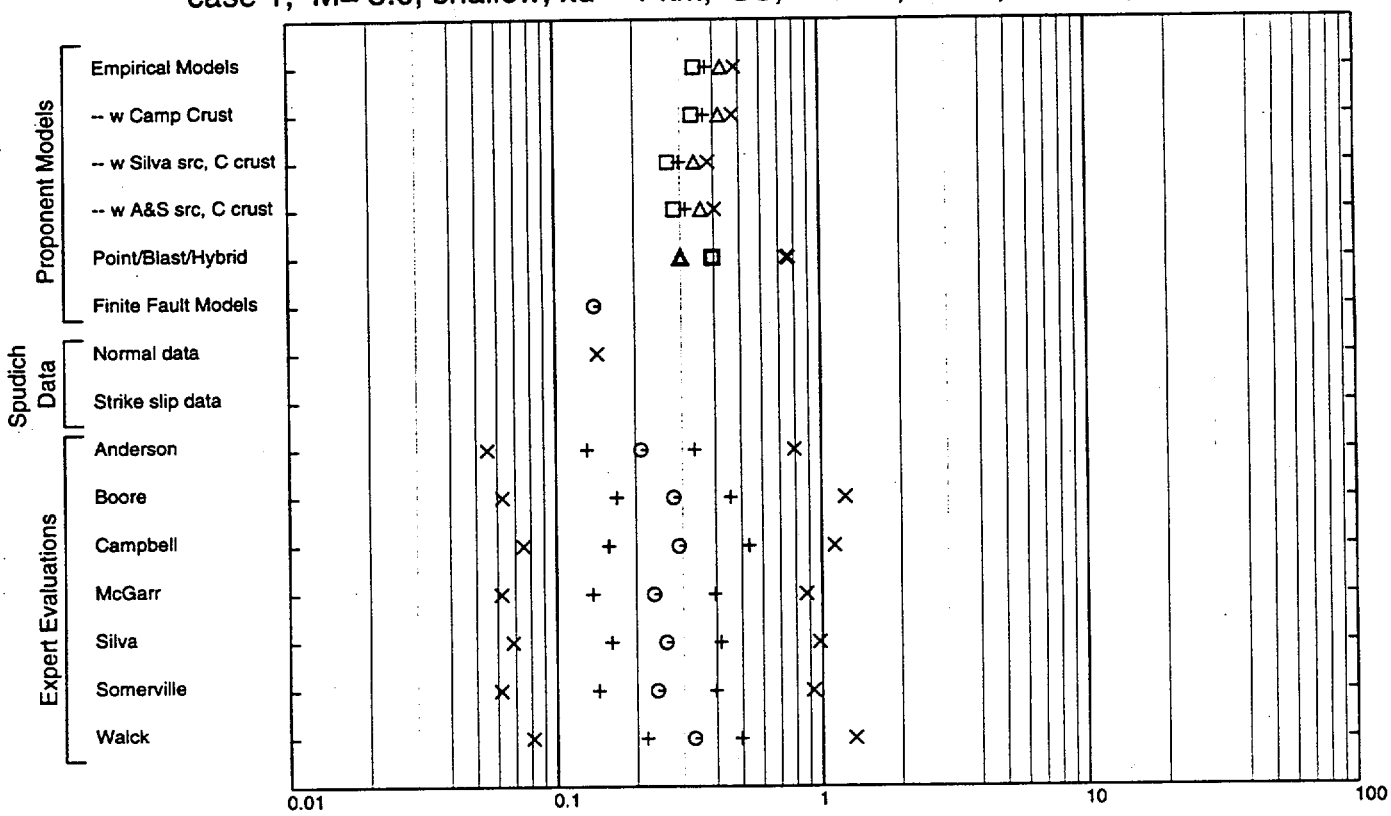
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

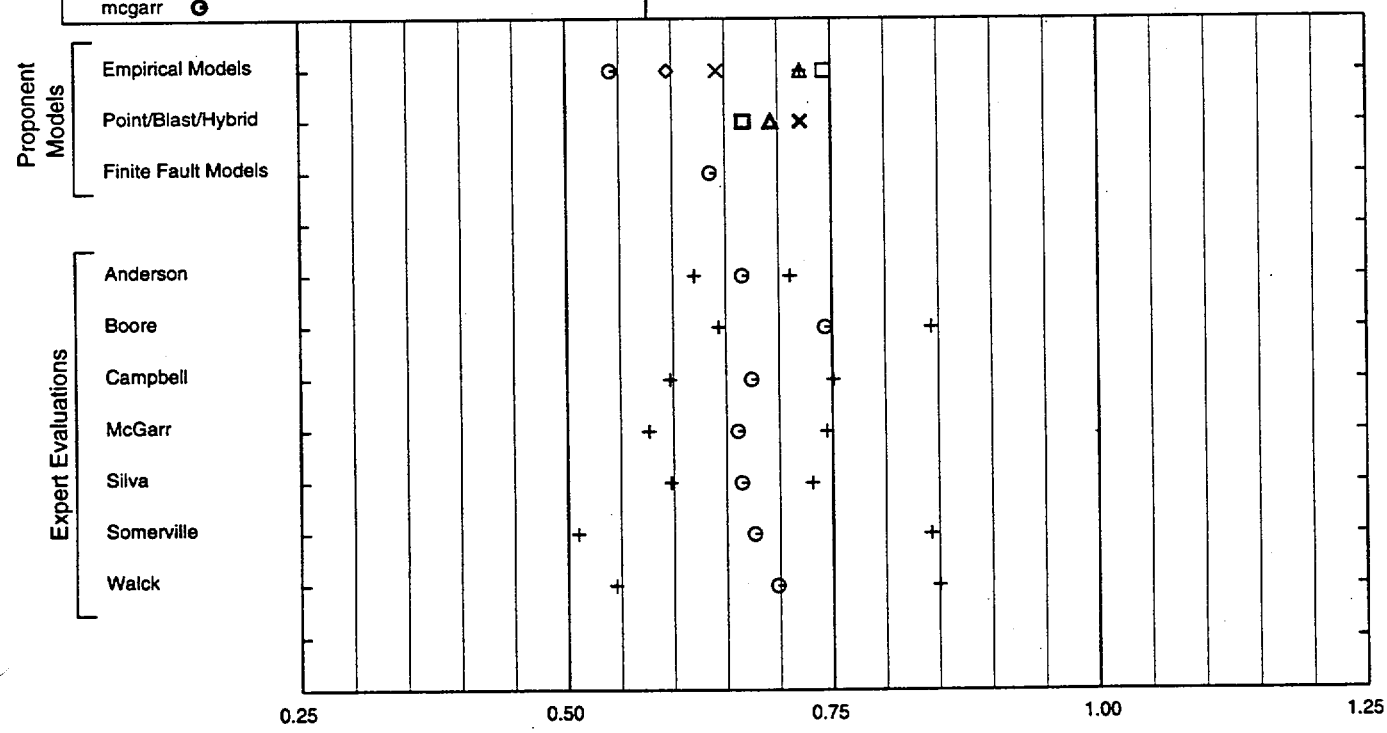
case 1, M= 5.0, shallow, xd= 1 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

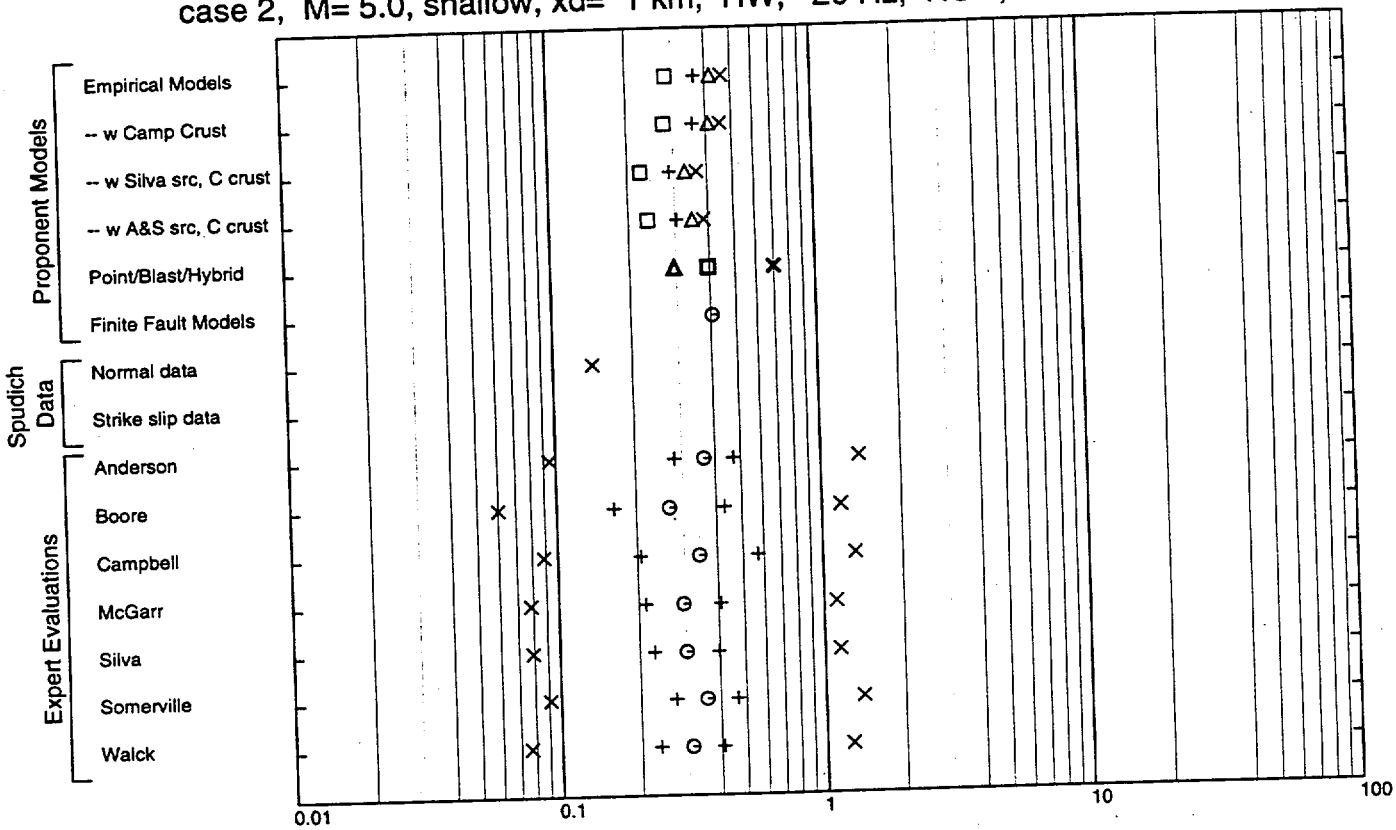
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

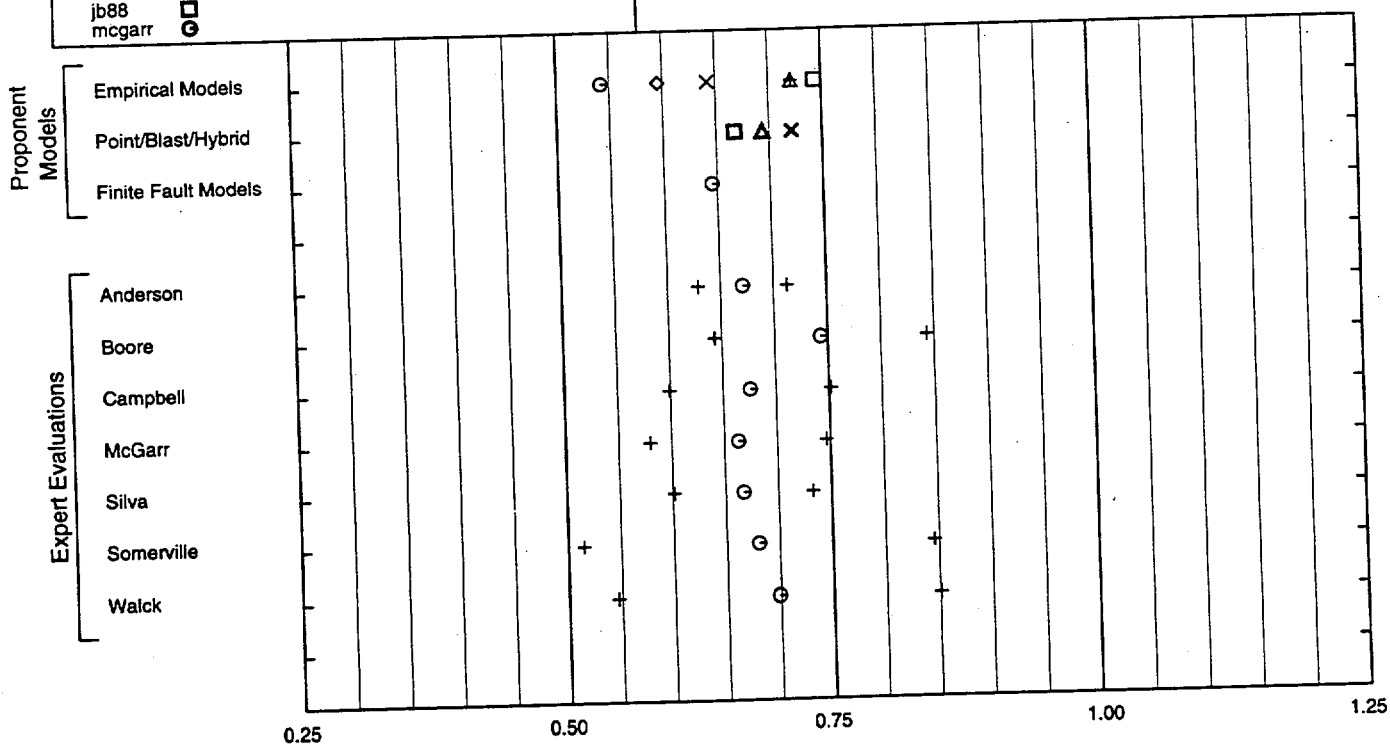
case 2, M= 5.0, shallow, xd= 1 km, HW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

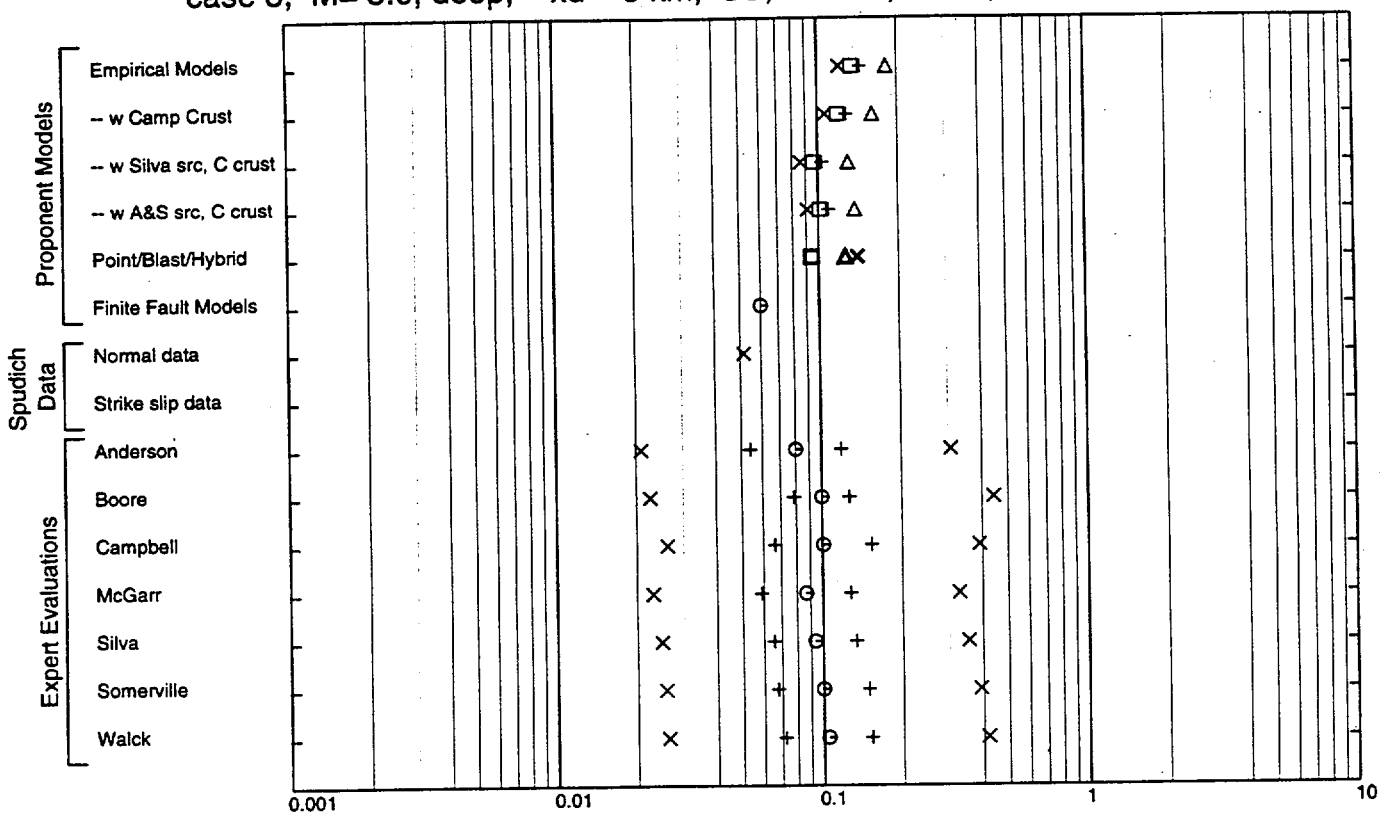
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

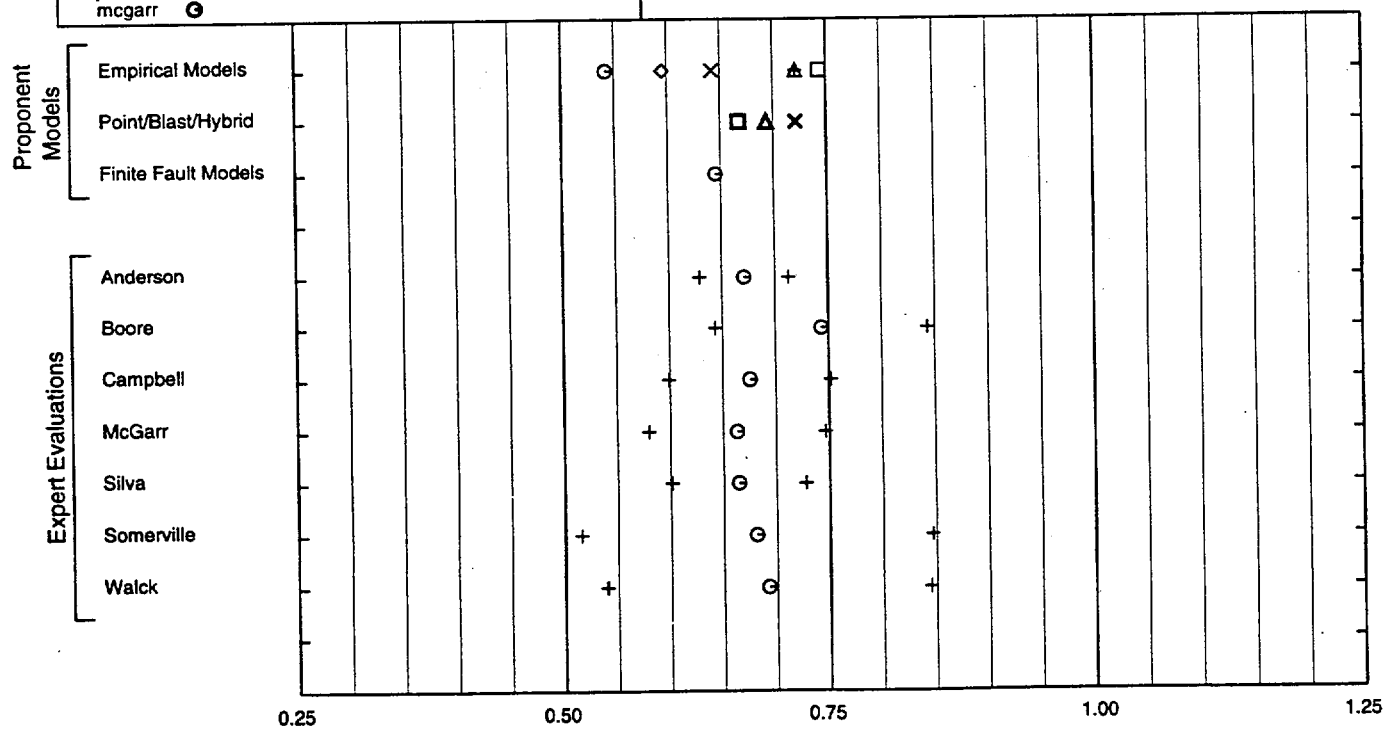
case 3, M= 5.0, deep, xd= 5 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



LEGEND

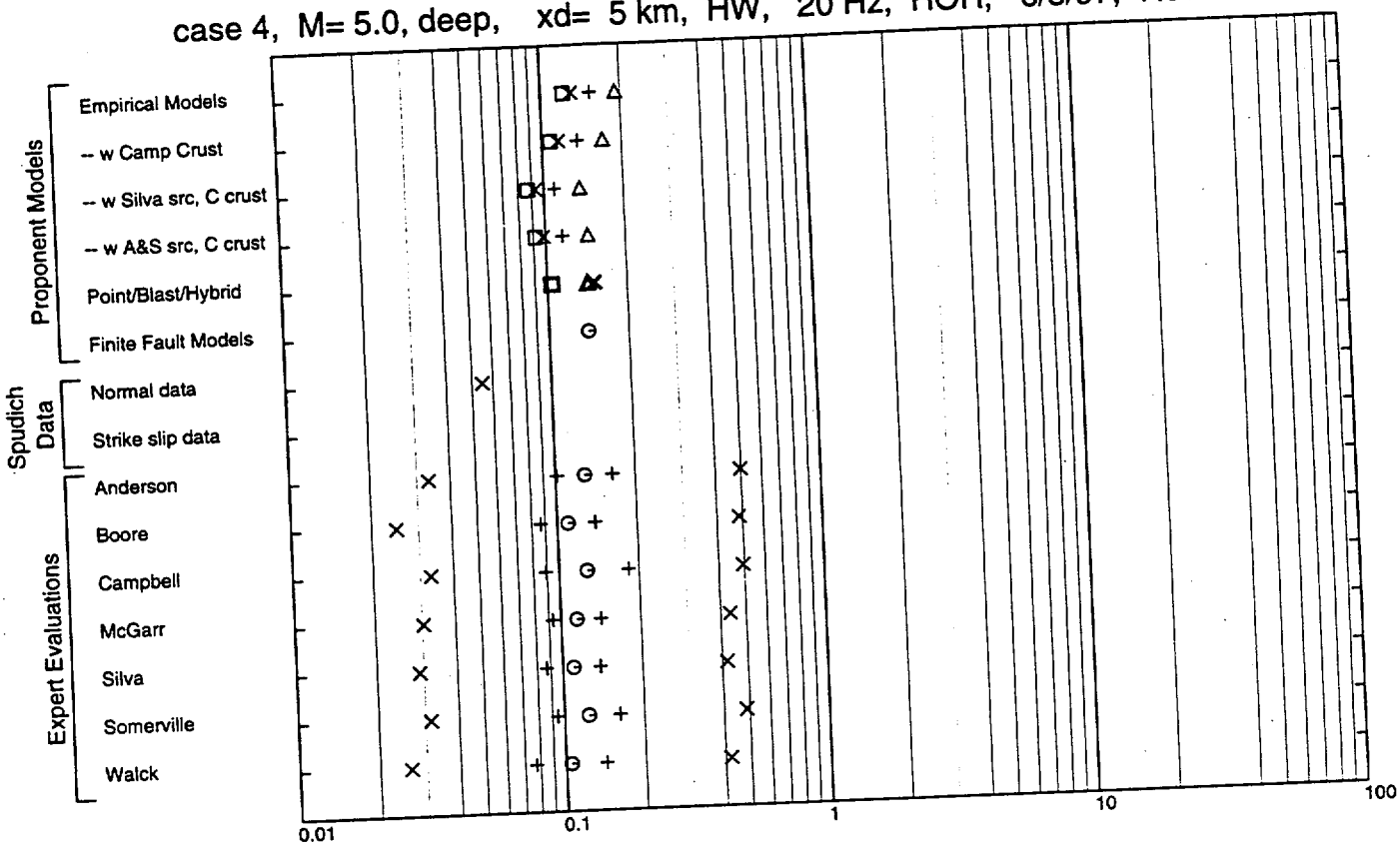
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



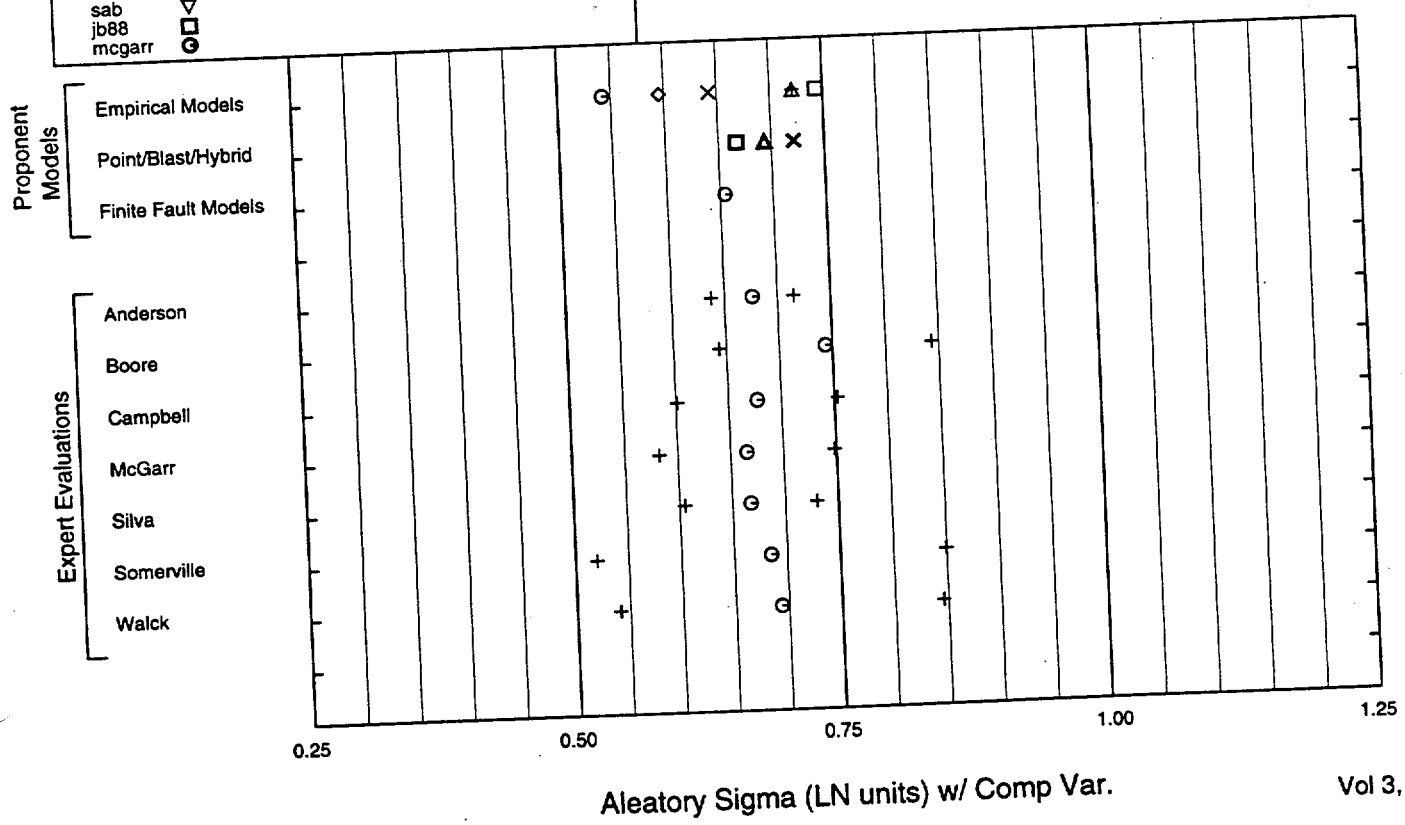
Aleatory Sigma (LN units) w/ Comp Var.

case 4, M= 5.0, deep, xd= 5 km, HW, 20 Hz, HOR, 6/5/97, Rev 1

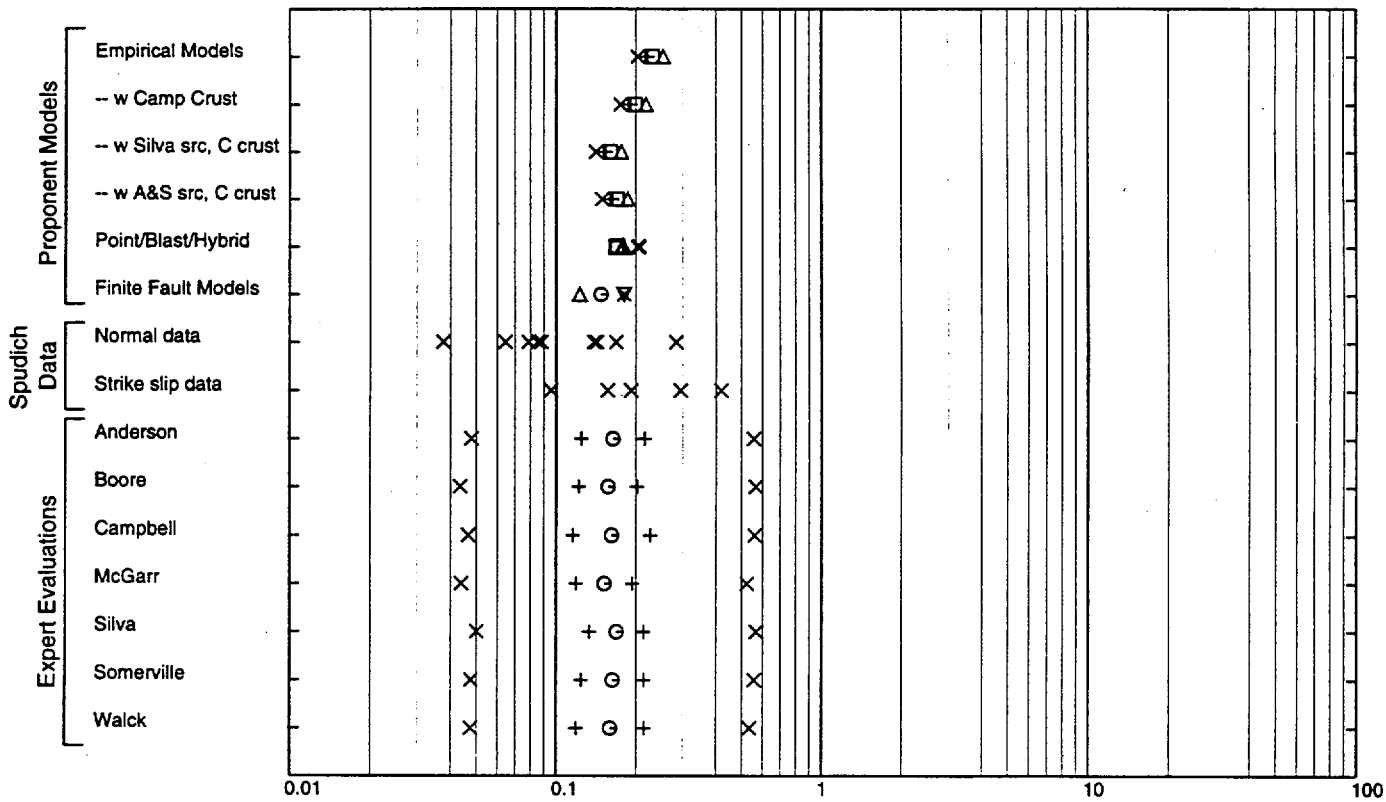


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



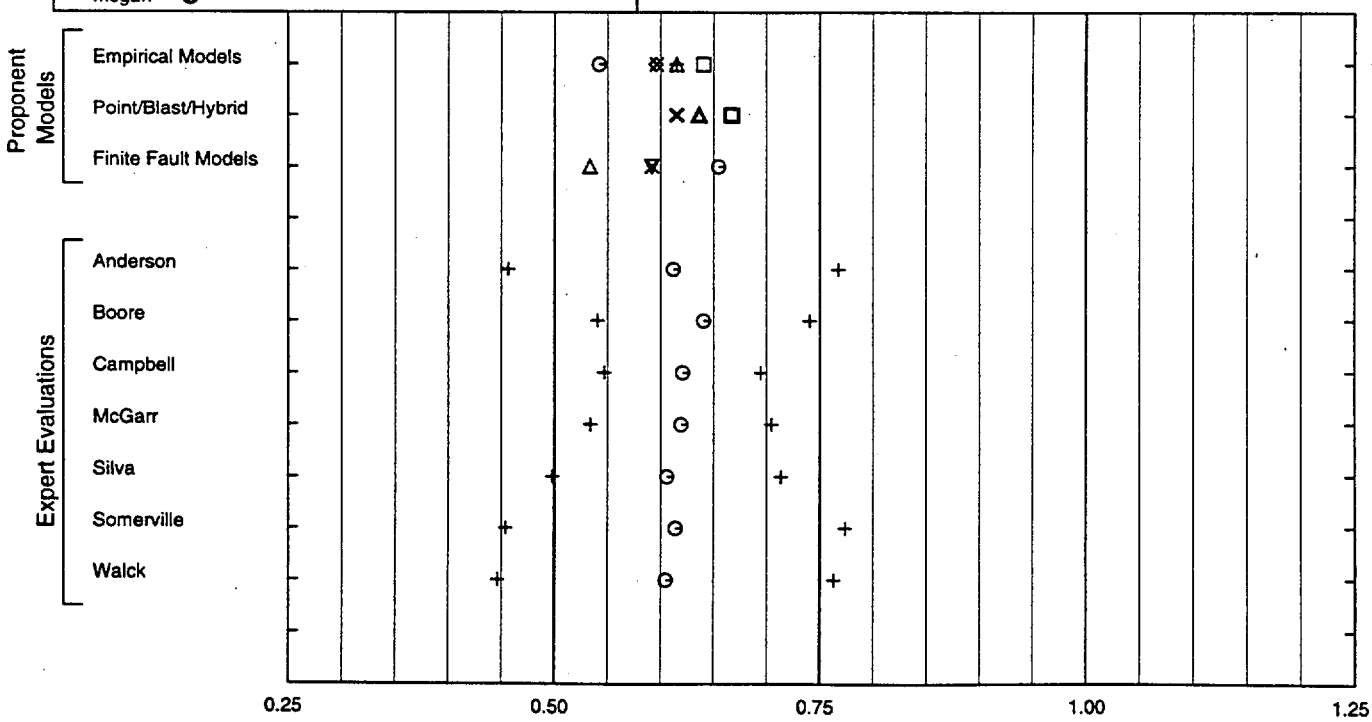
case 5, M= 5.8, deep, xd= 10 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

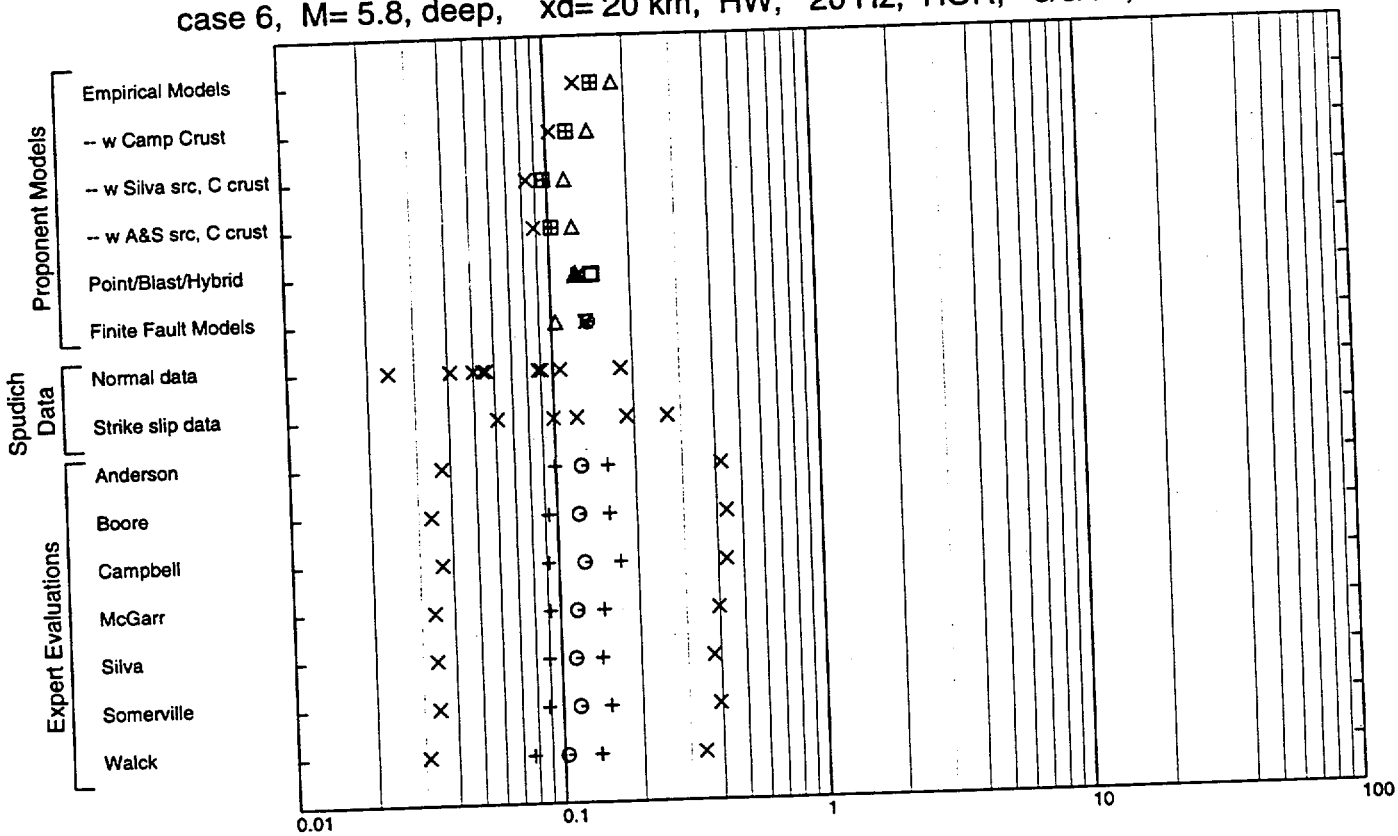
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

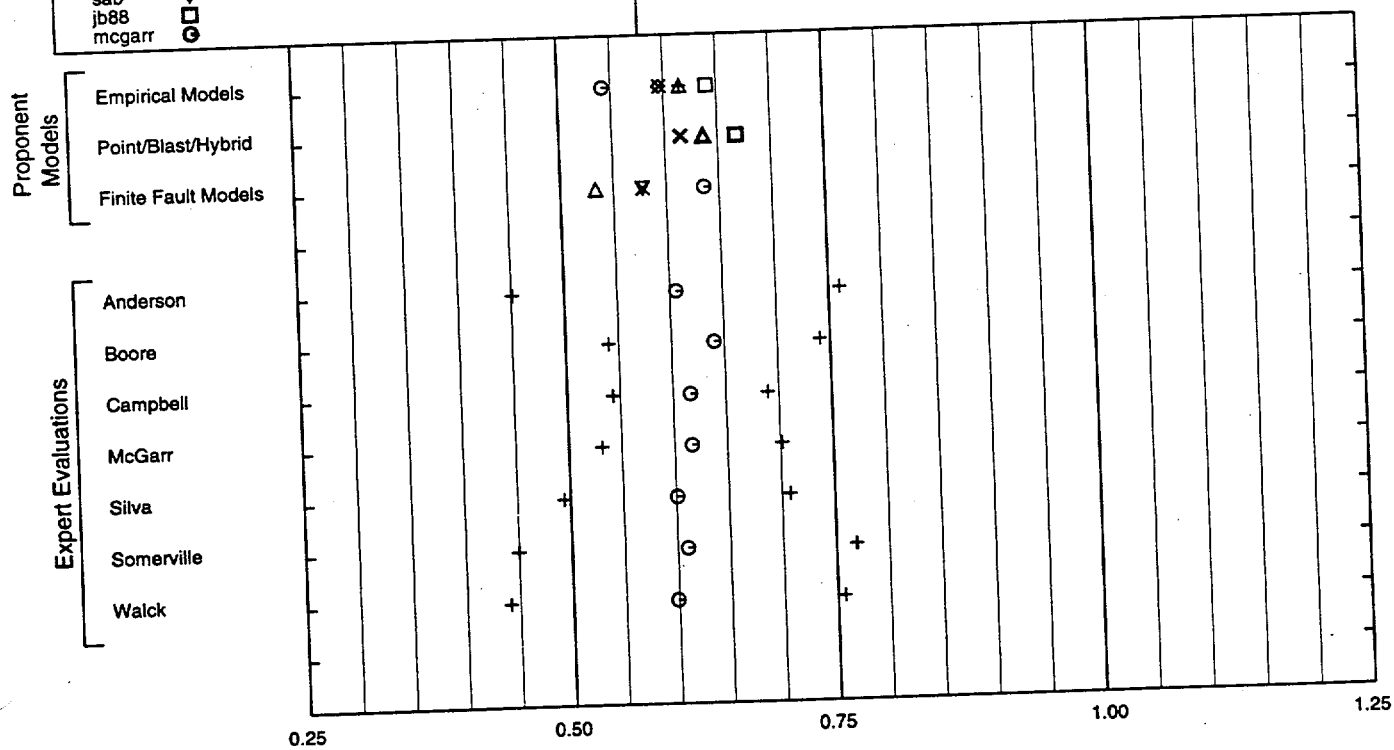
case 6, M= 5.8, deep, xd= 20 km, HW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

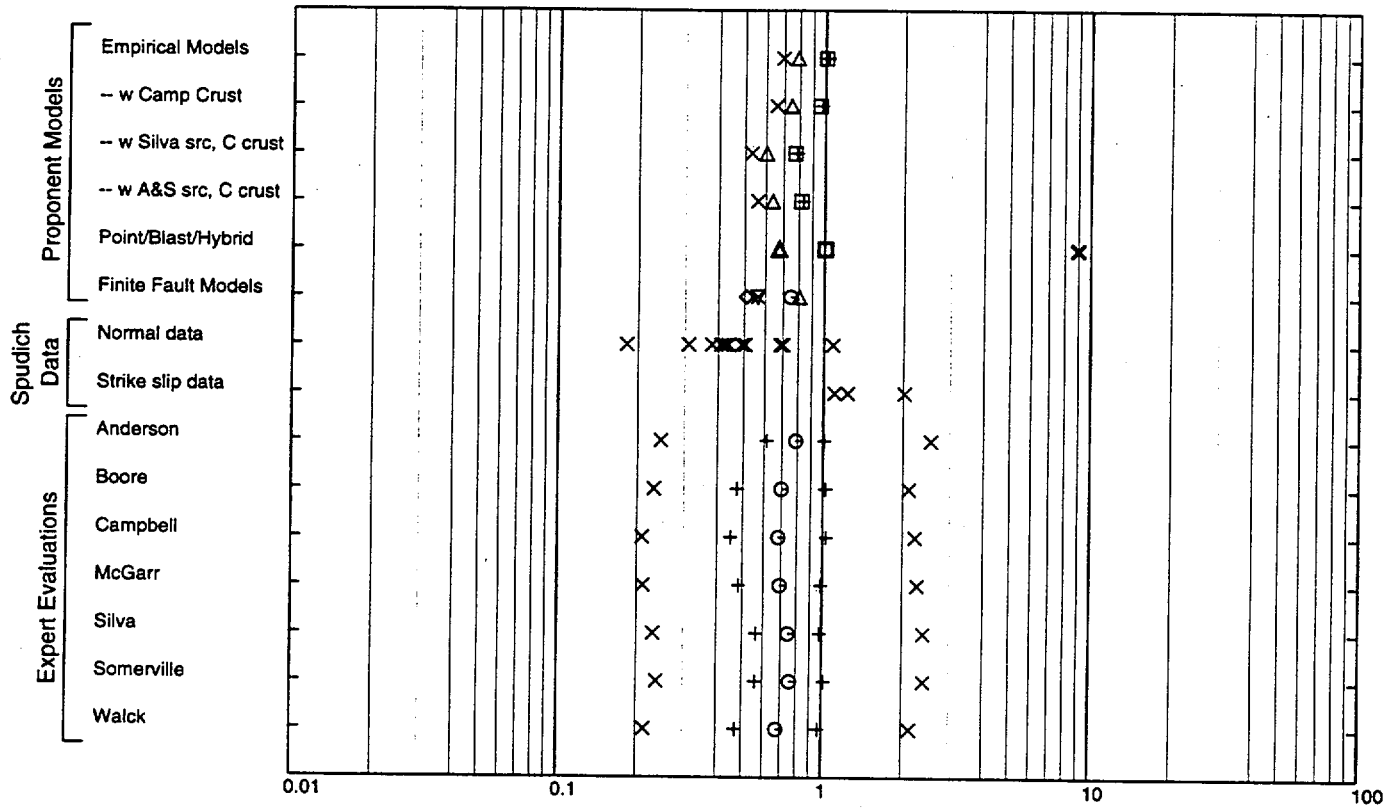
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

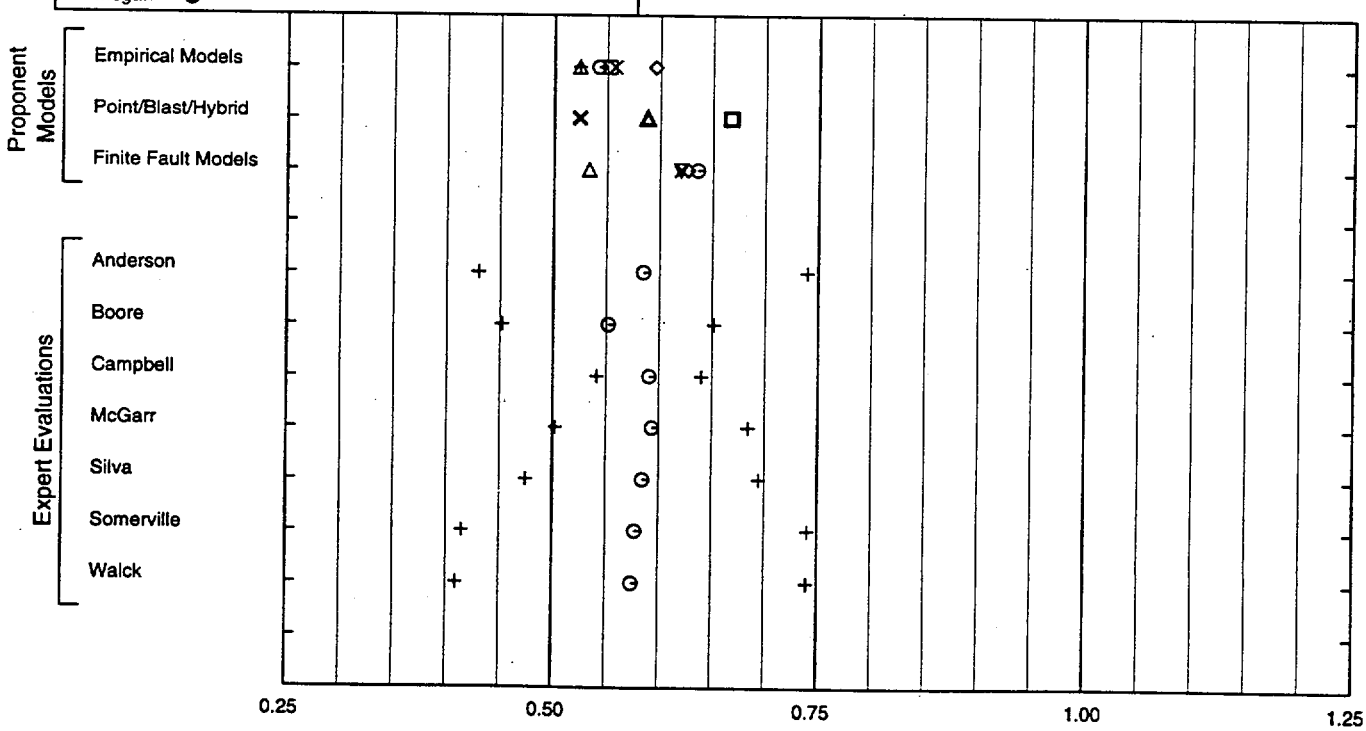
case 7, M= 6.5, shallow, xd= 1 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

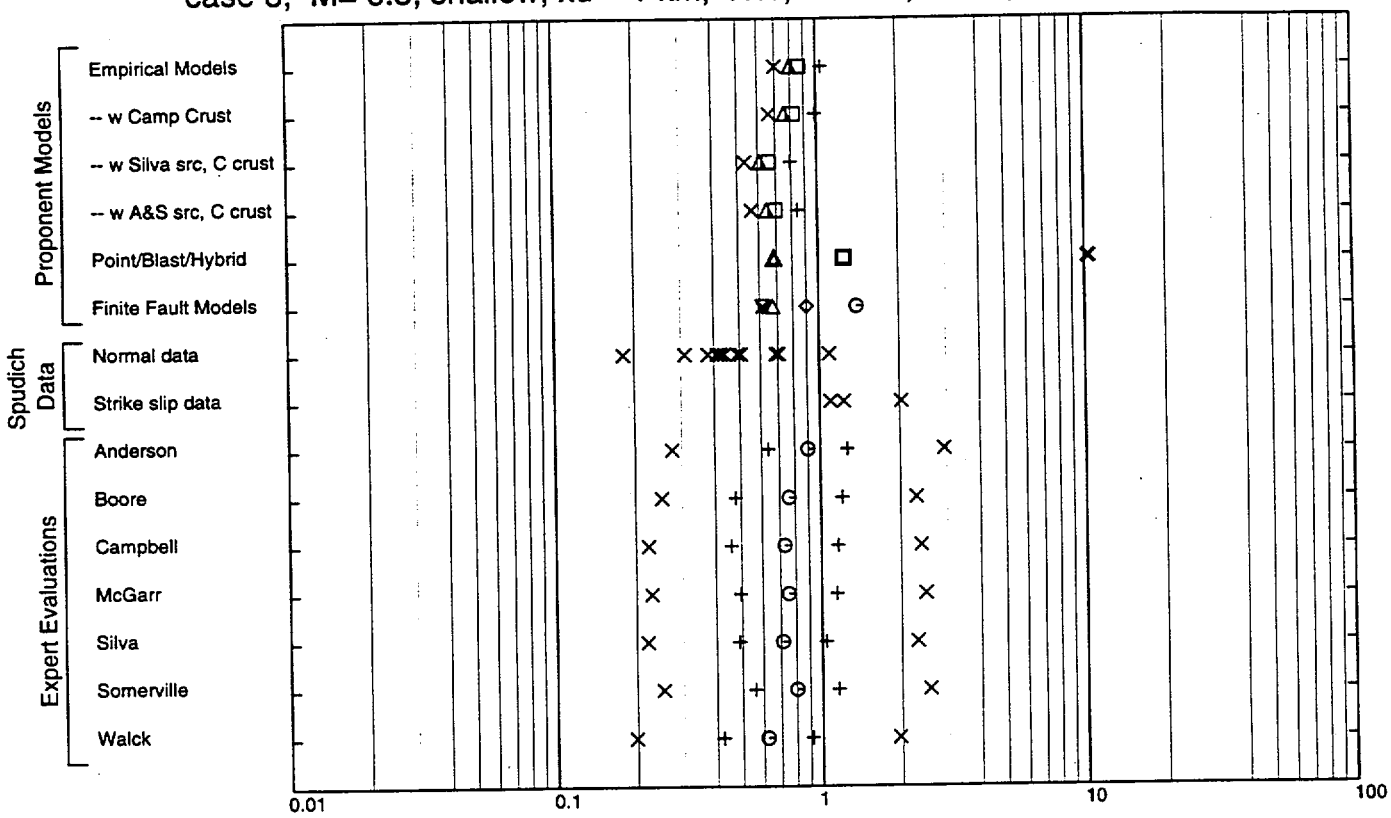
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

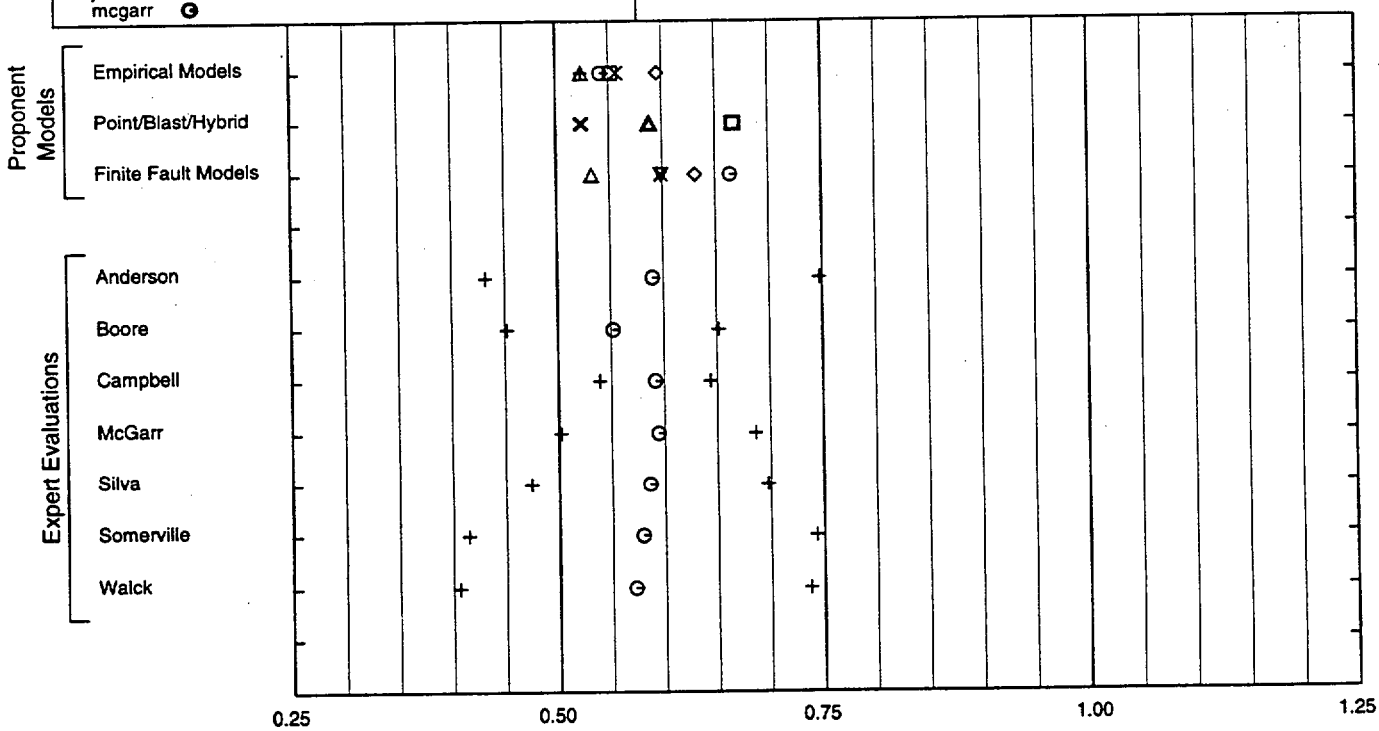
case 8, M= 6.5, shallow, xd= 1 km, HW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

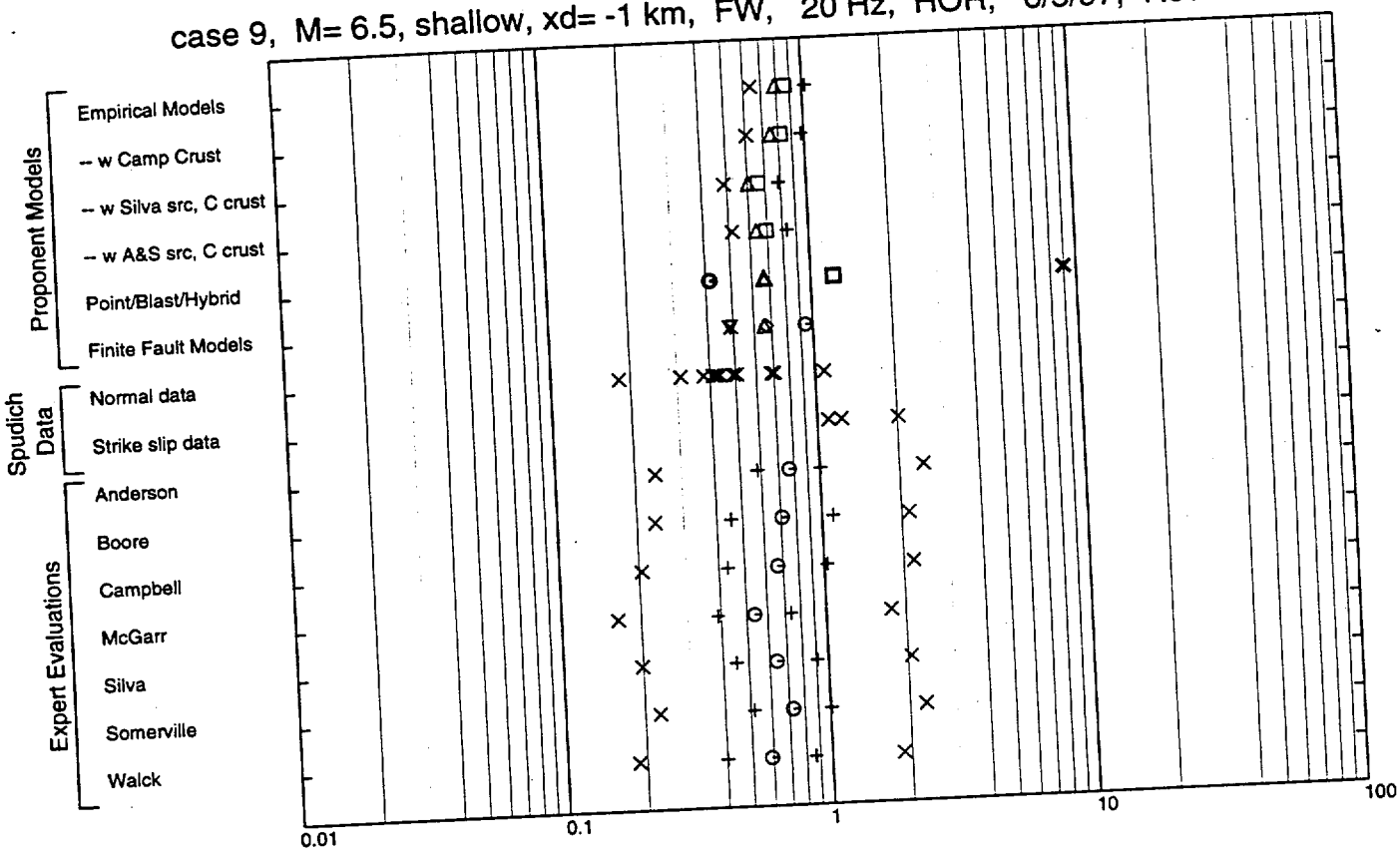
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



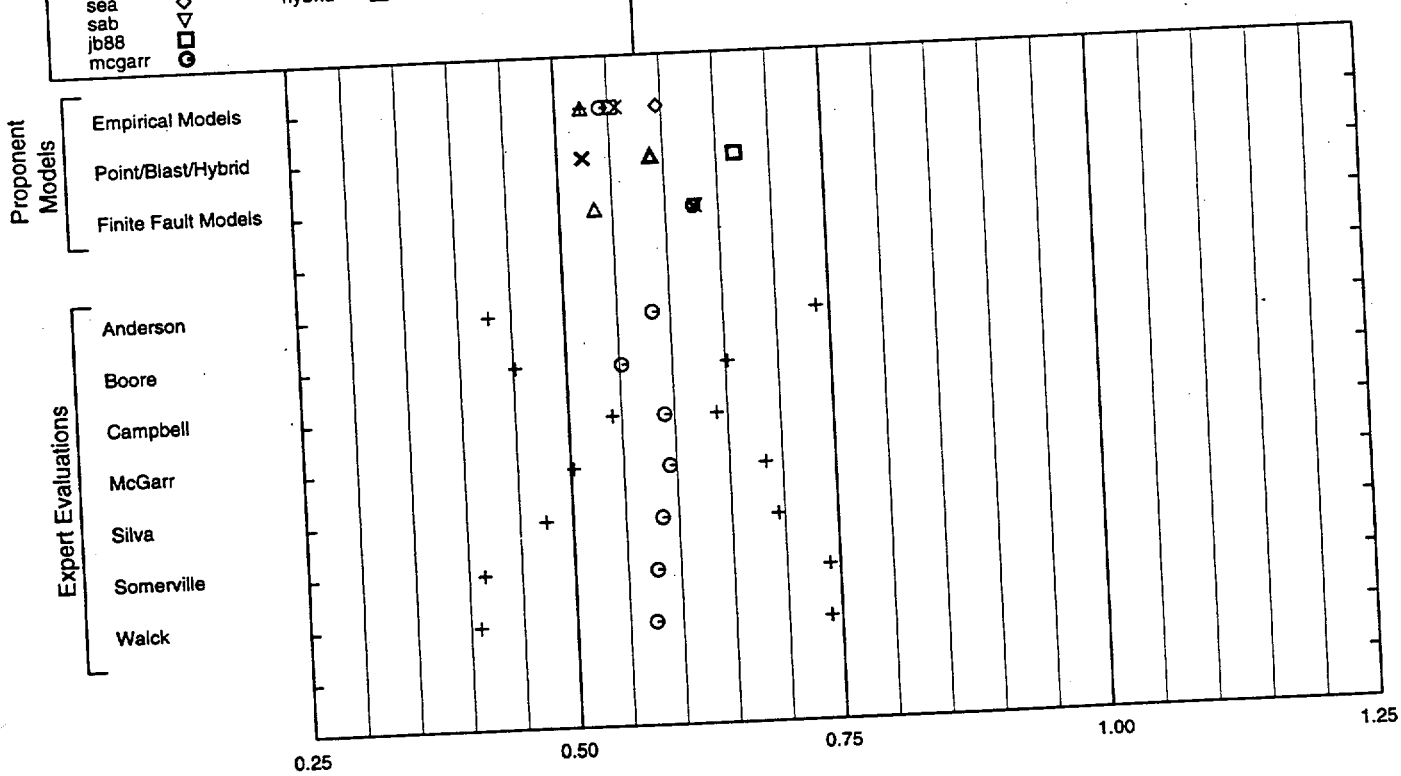
Aleatory Sigma (LN units) w/ Comp Var.

case 9, M= 6.5, shallow, xd= -1 km, FW, 20 Hz, HOR, 6/5/97, Rev 1

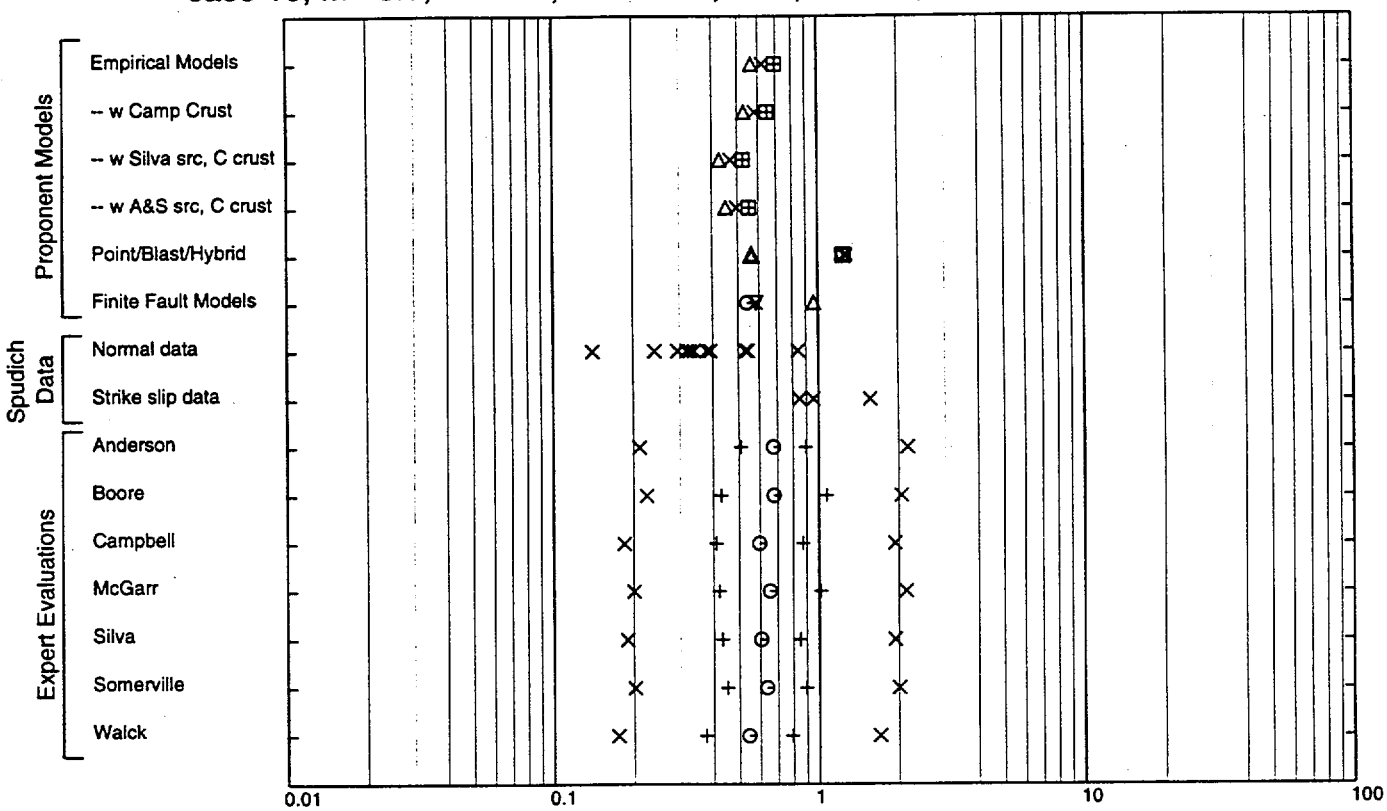


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



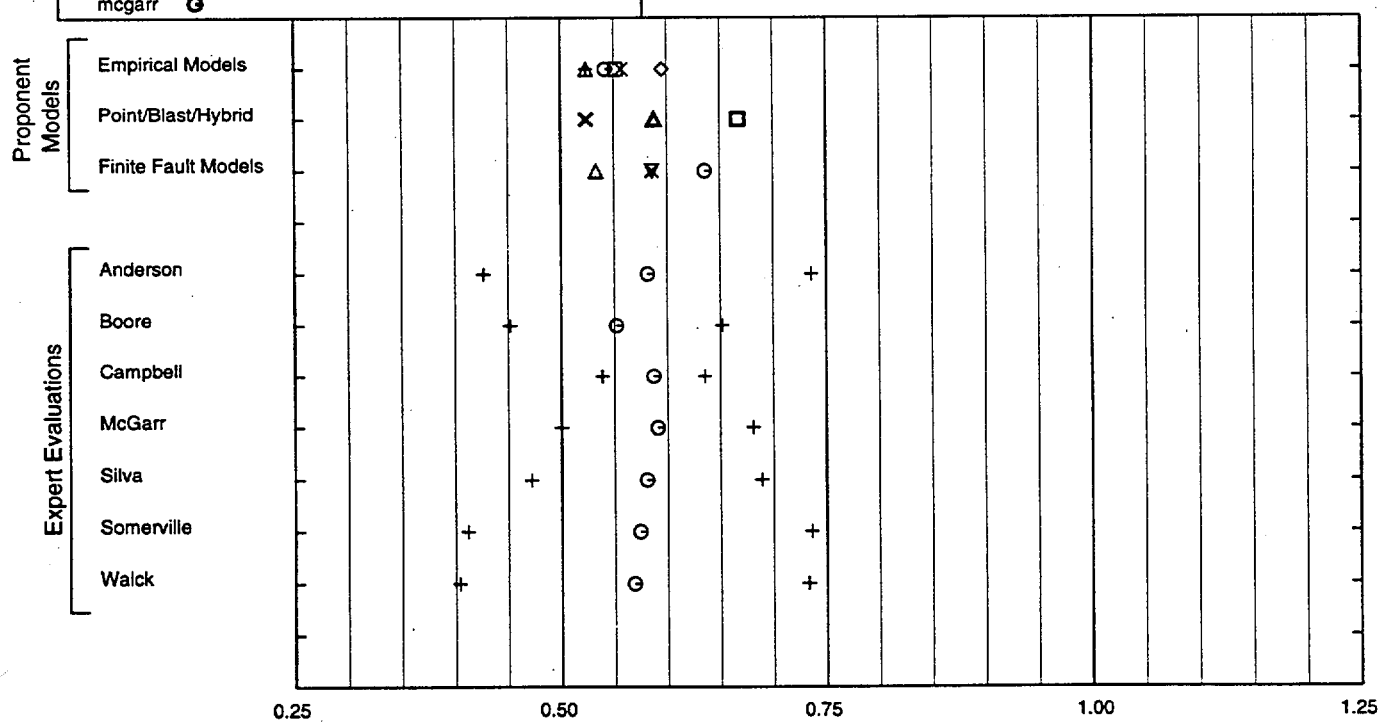
case 10, M= 6.5, shallow, xd= 5 km, HW, 20 Hz, HOR, 6/5/97, Rev 1



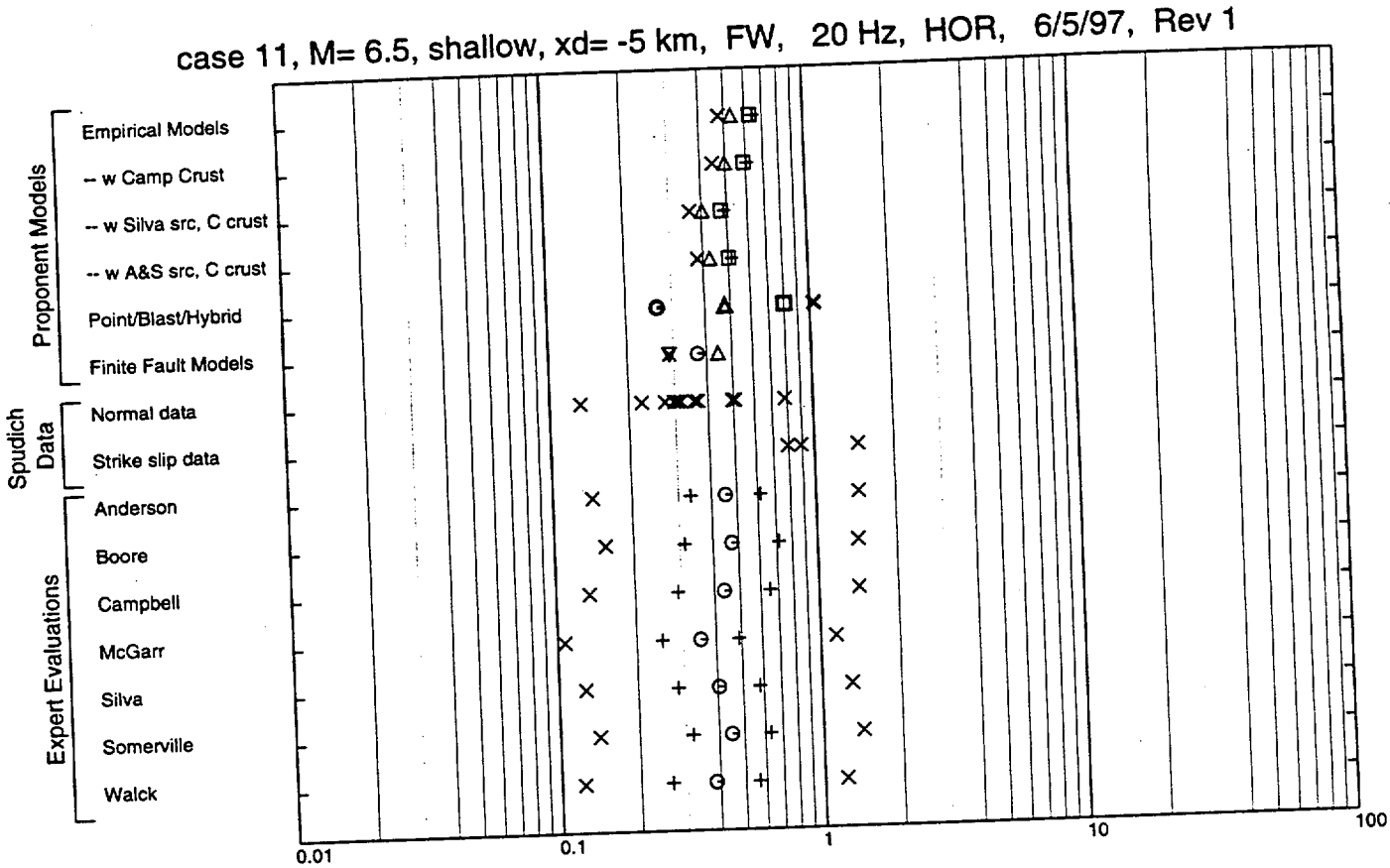
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

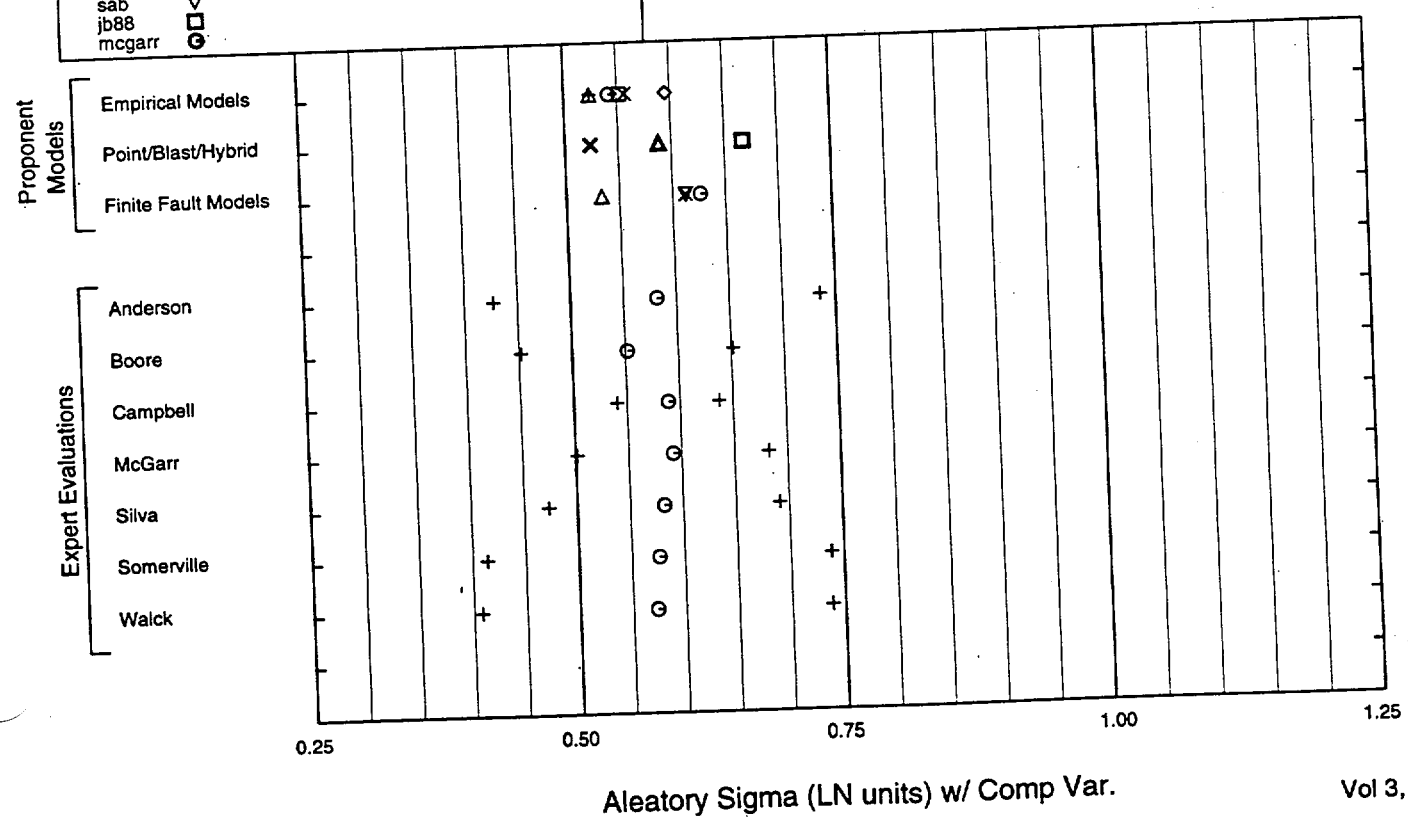


Aleatory Sigma (LN units) w/ Comp Var.

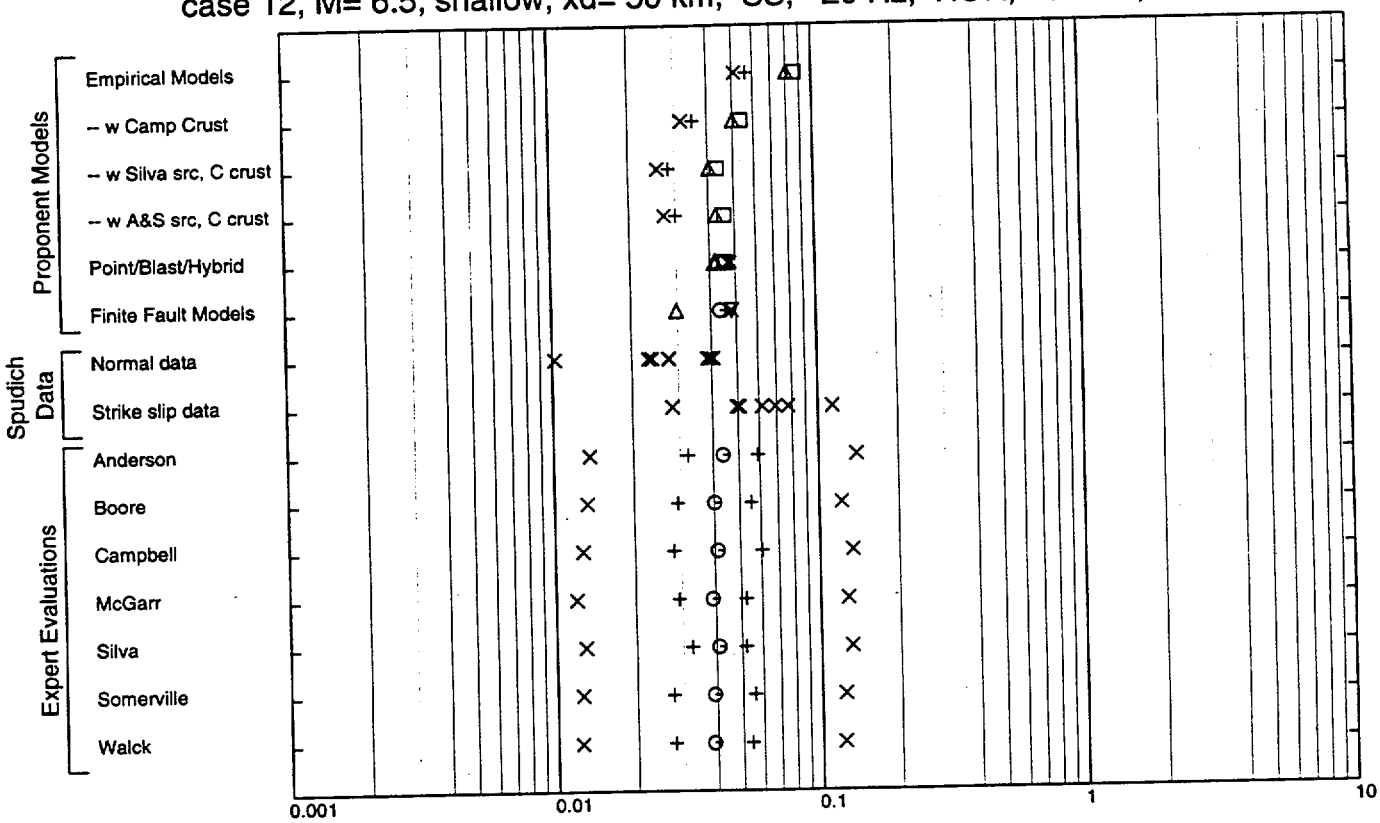


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



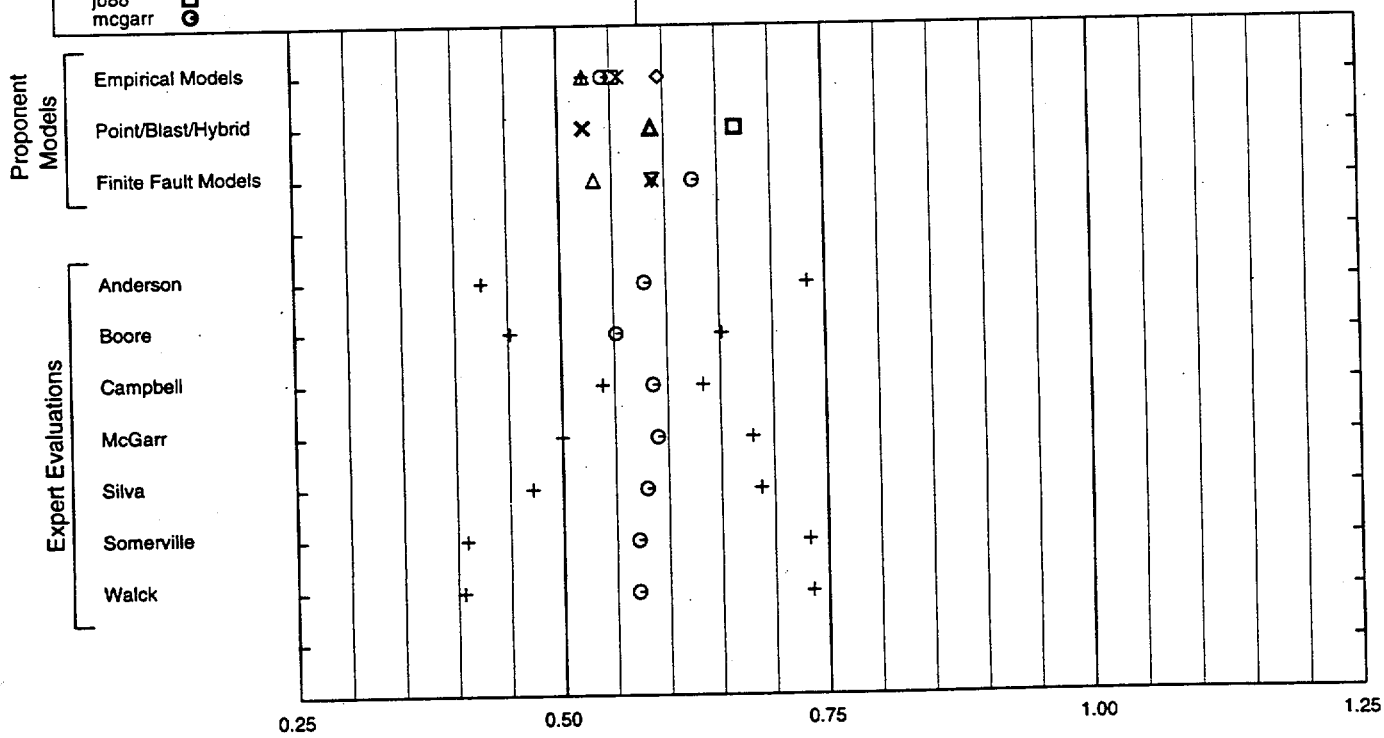
case 12, M= 6.5, shallow, xd= 50 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

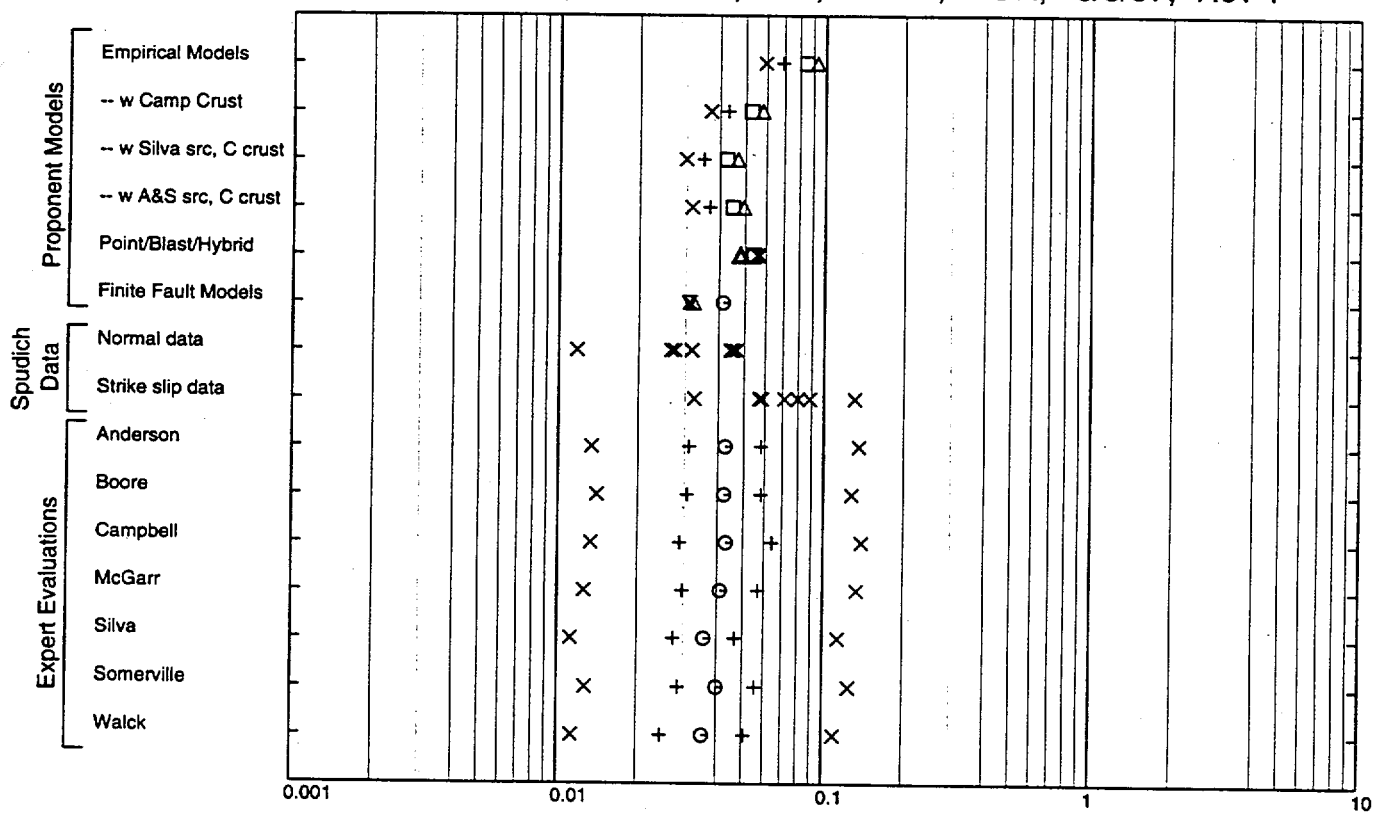
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

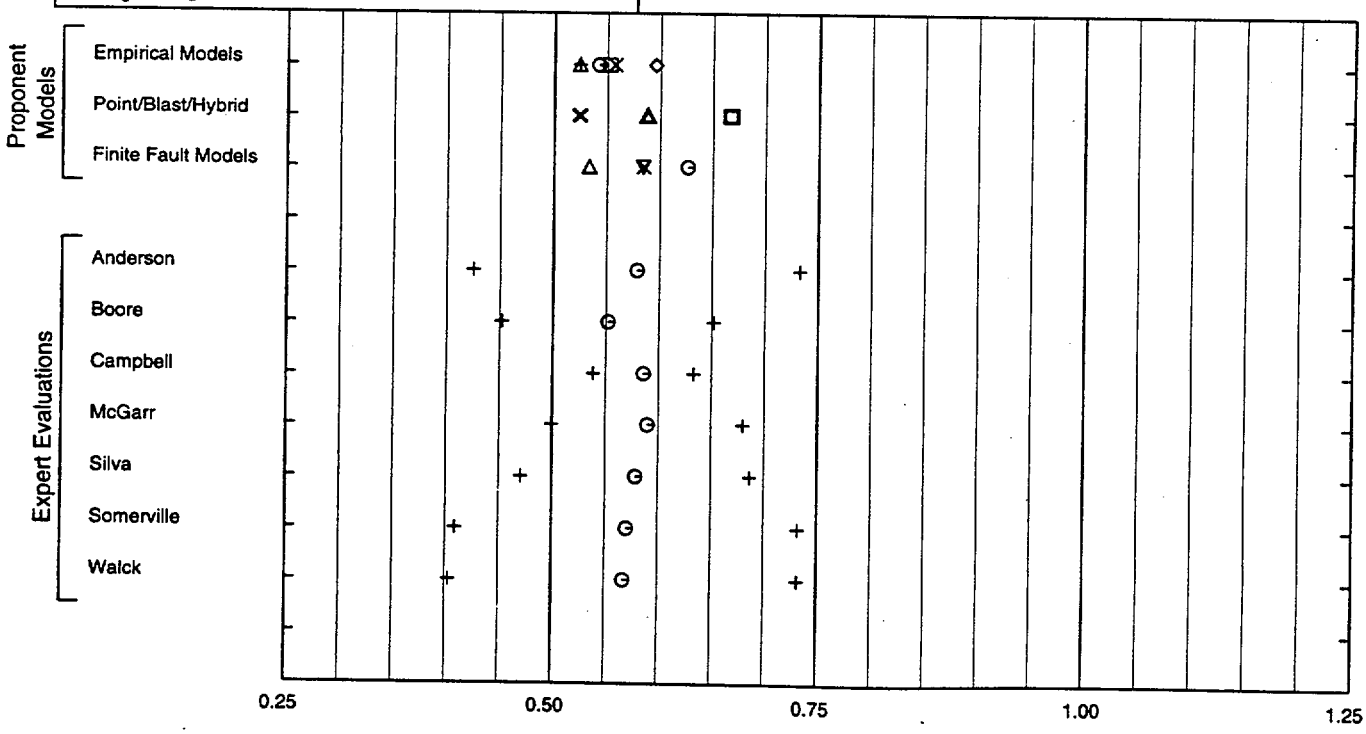
case 13, M= 6.5, shallow, xd= 50 km, HW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

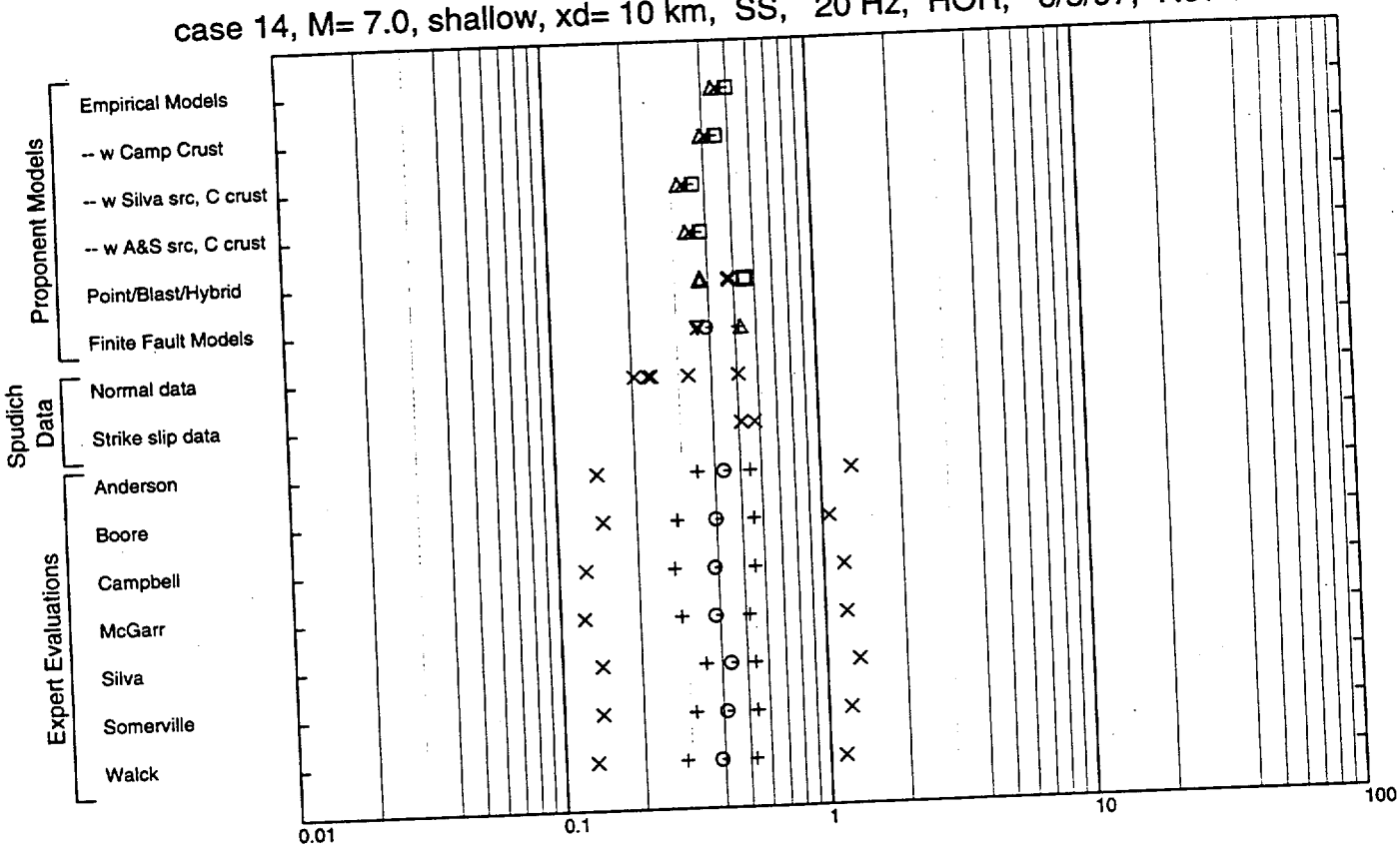
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



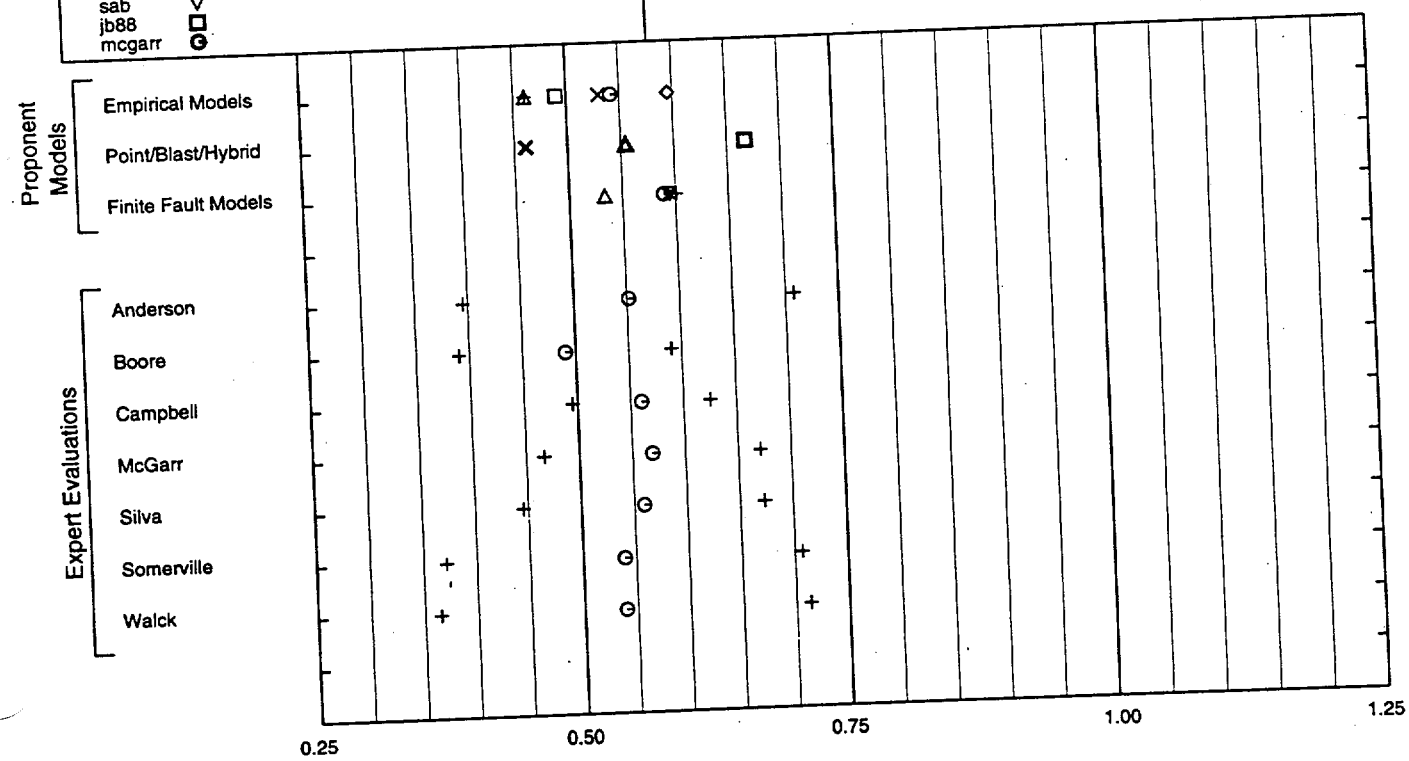
Aleatory Sigma (LN units) w/ Comp Var.

case 14, M= 7.0, shallow, xd= 10 km, SS, 20 Hz, HOR, 6/5/97, Rev 1

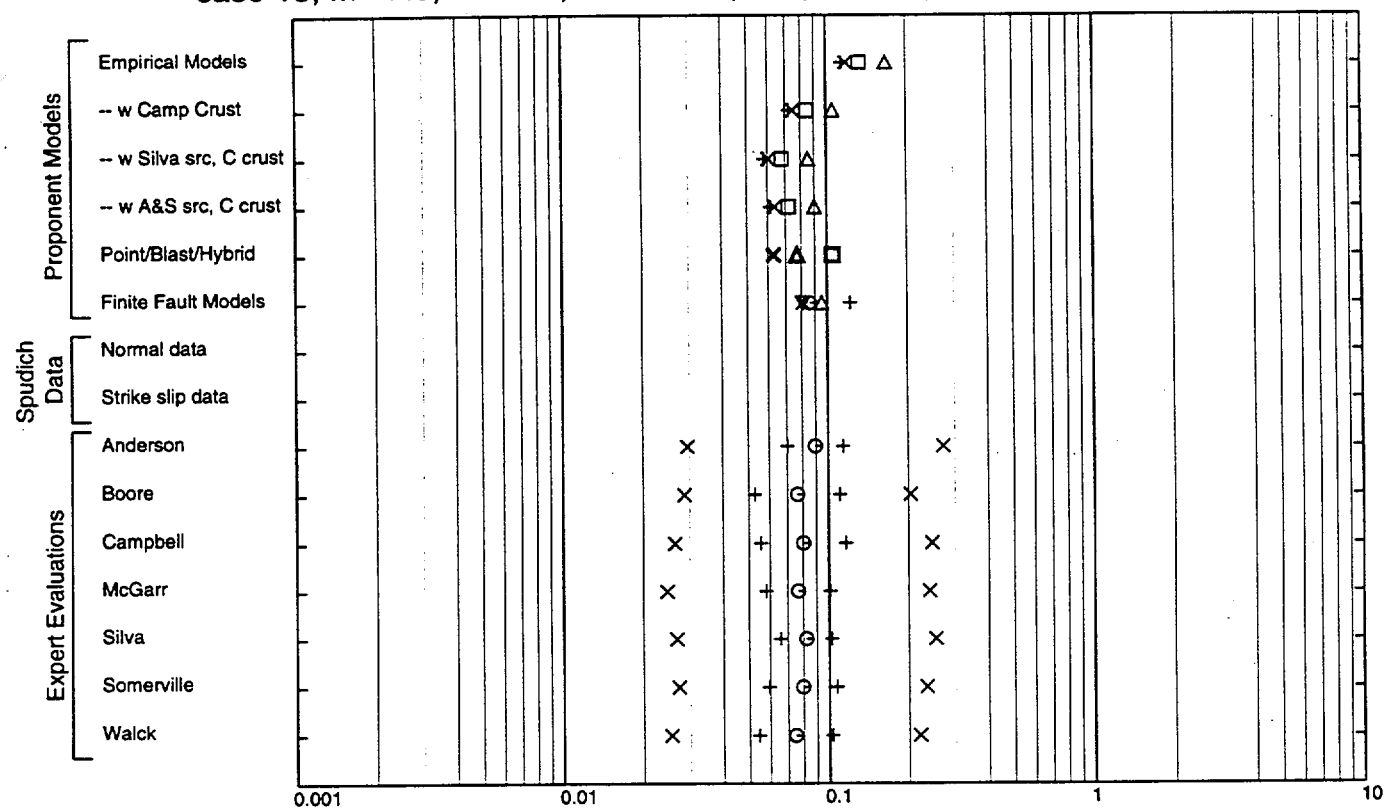


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	G	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	G				

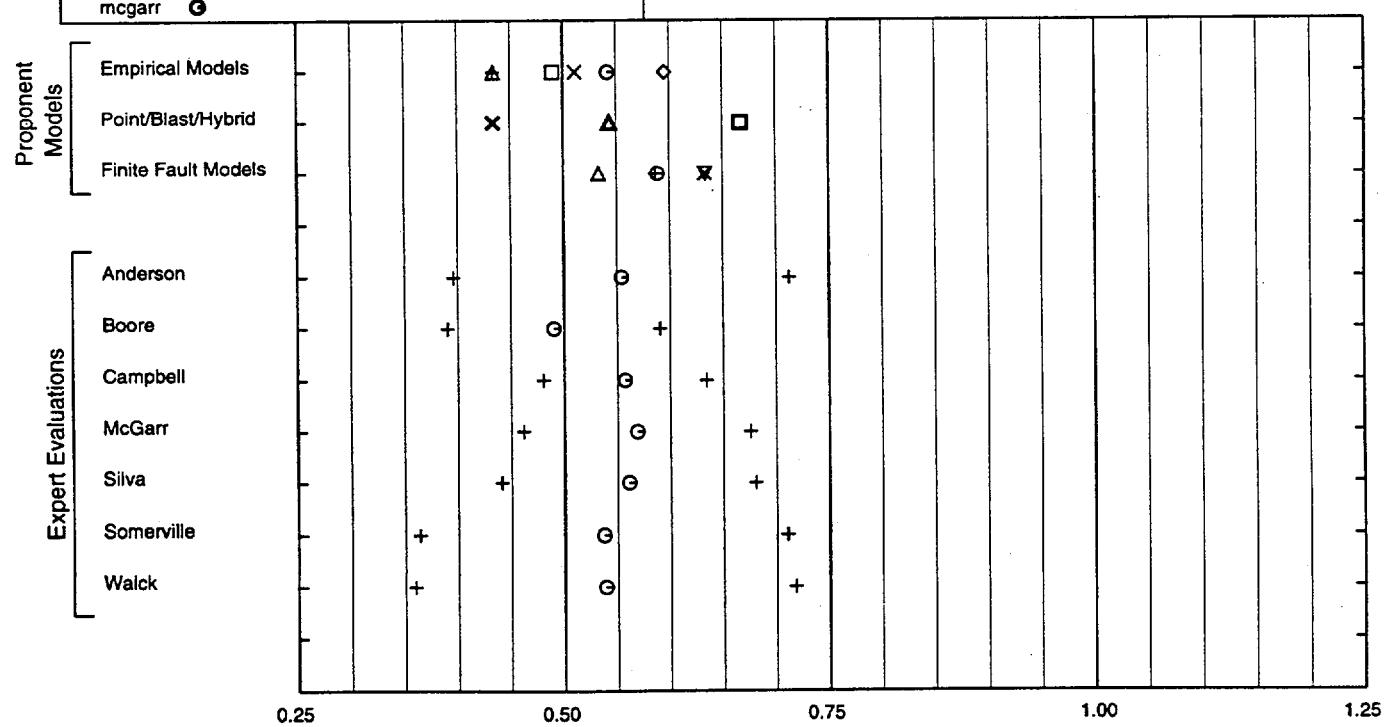


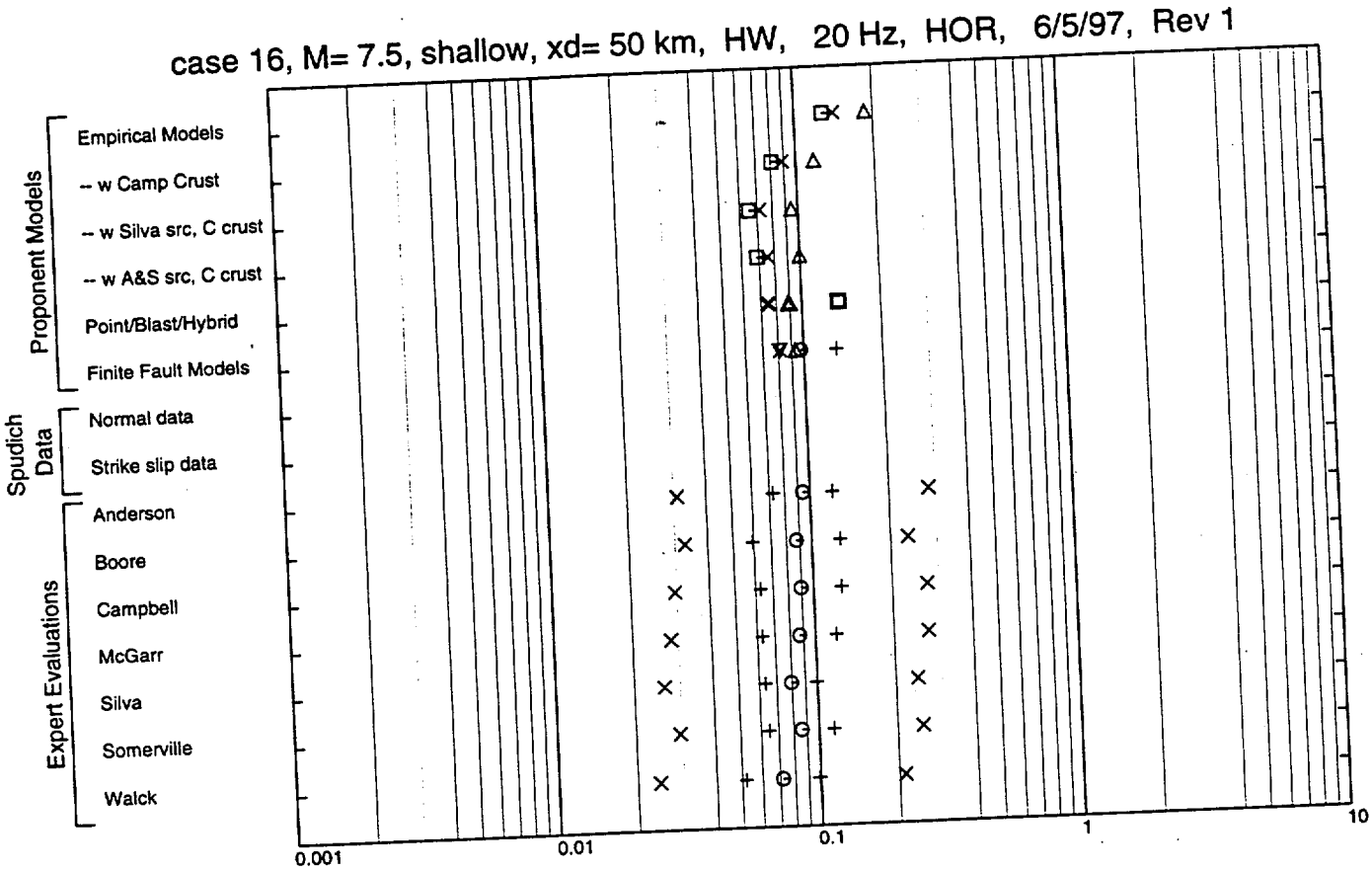
case 15, M= 7.5, shallow, xd= 50 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



LEGEND

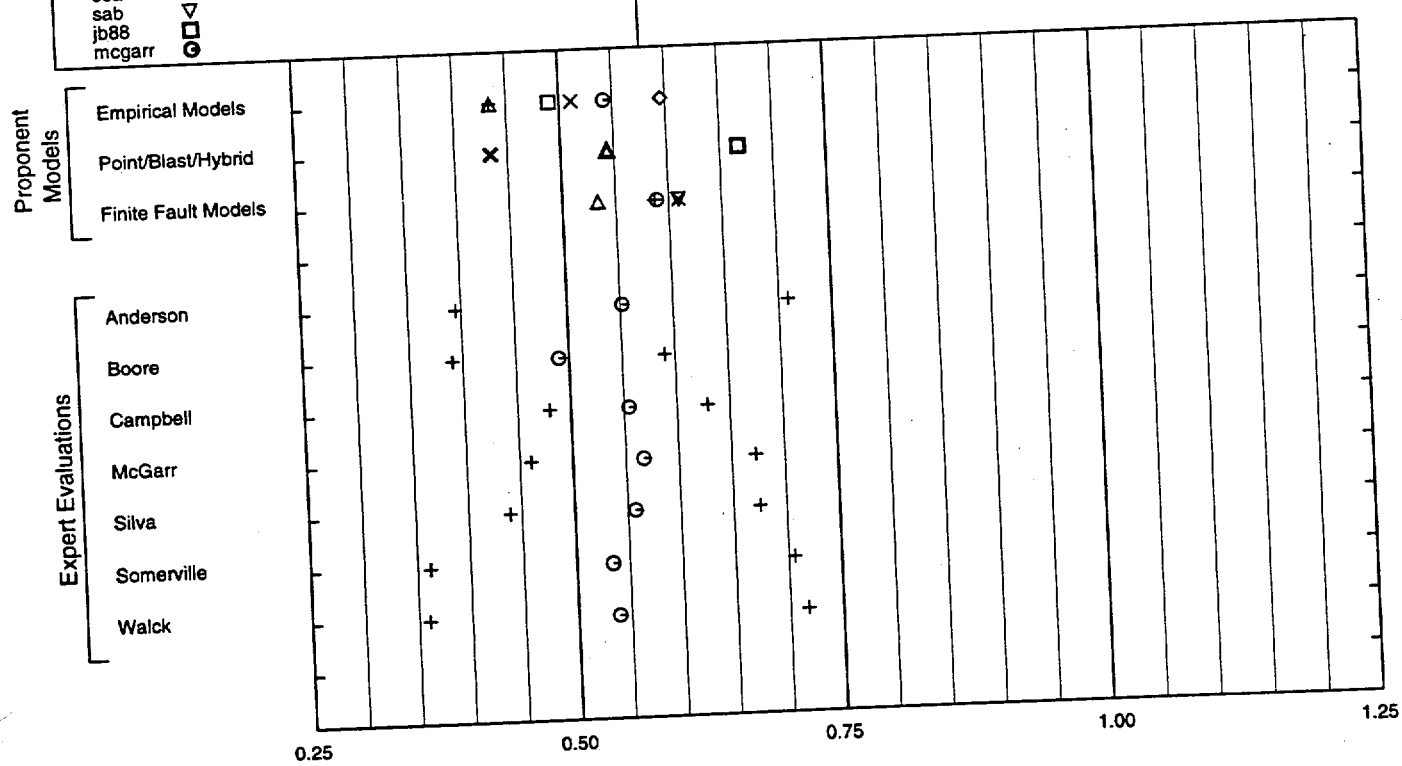
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



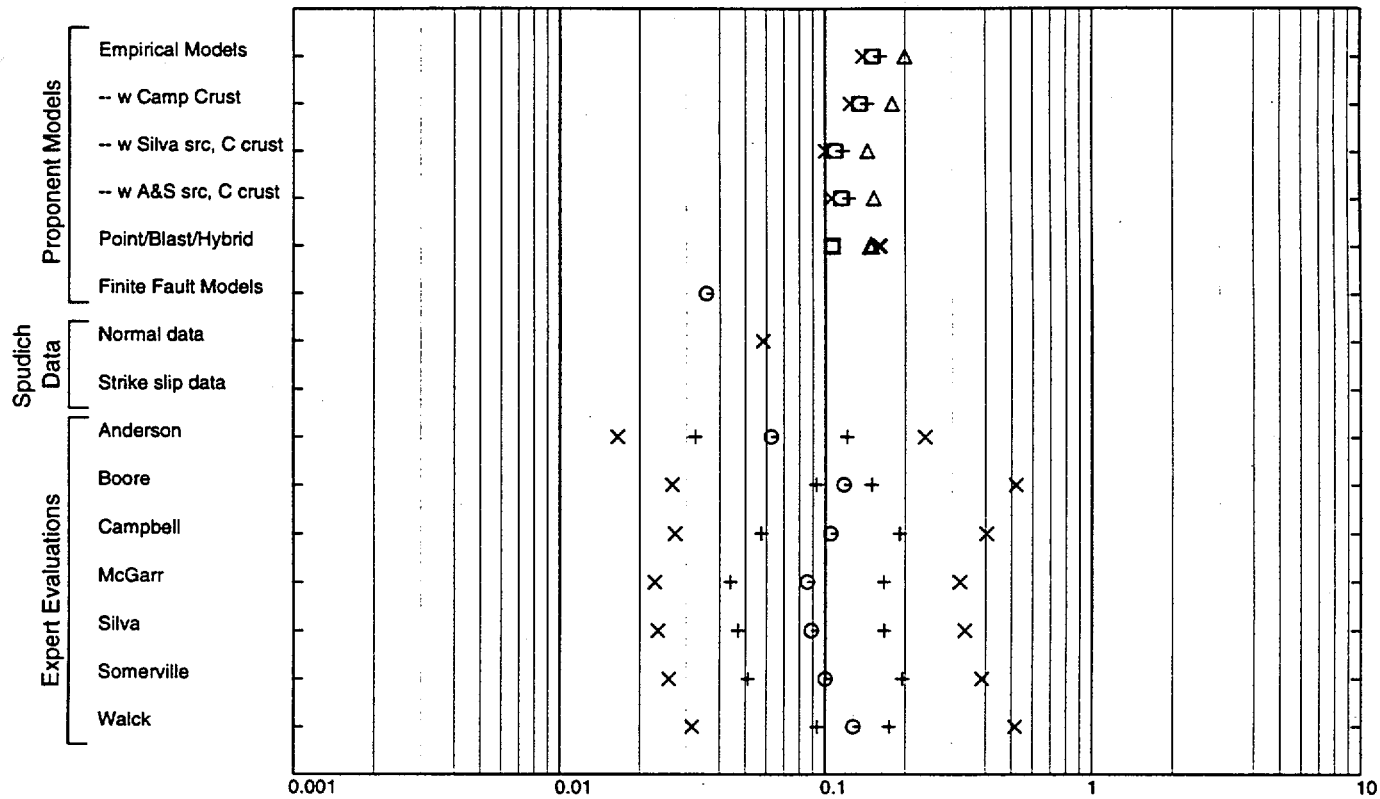


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



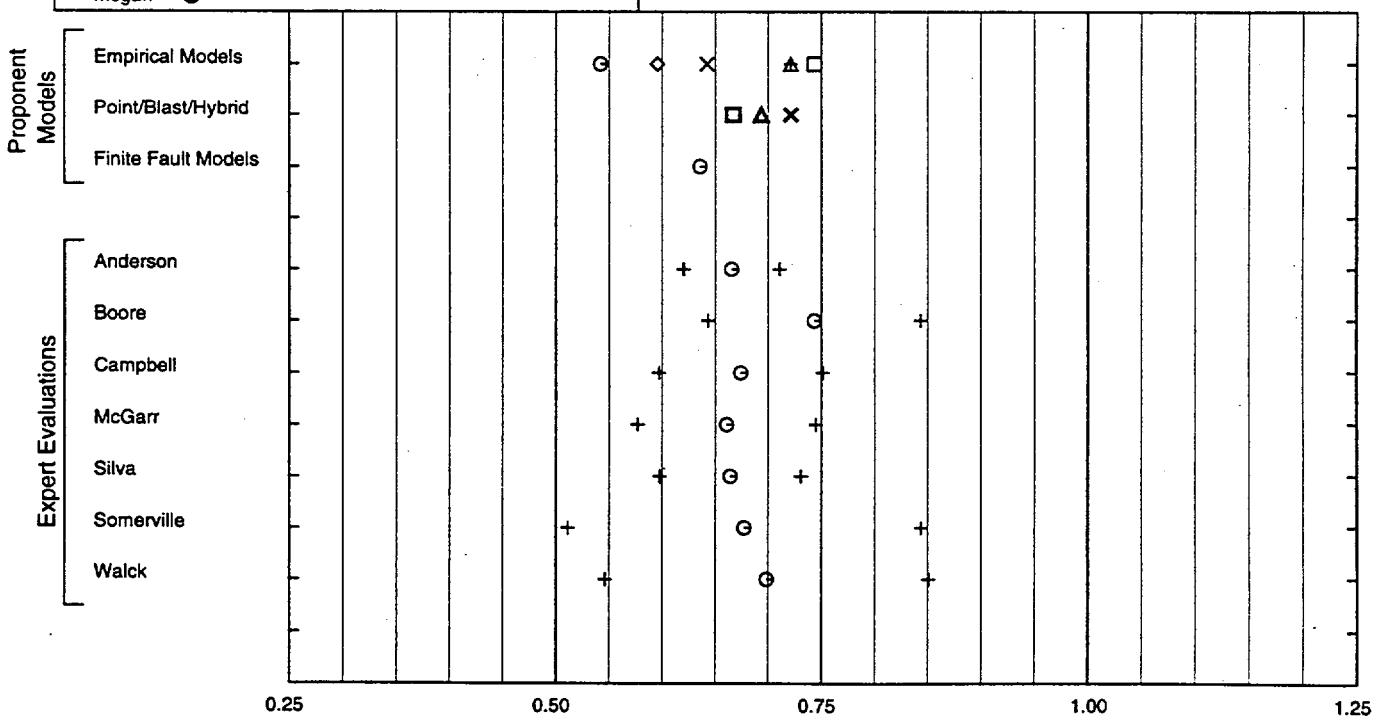
case 17, M= 5.0, deep, xd= 1 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



LEGEND

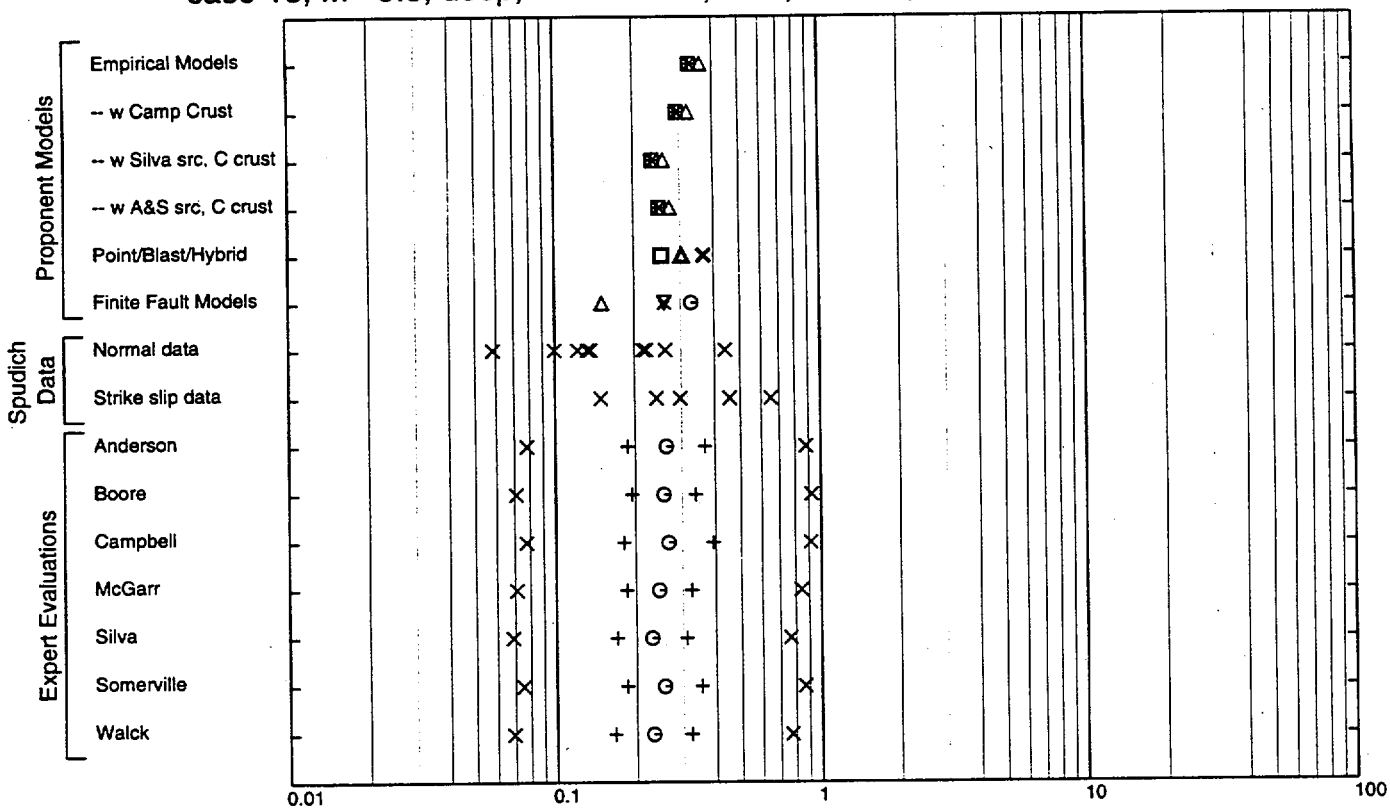
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

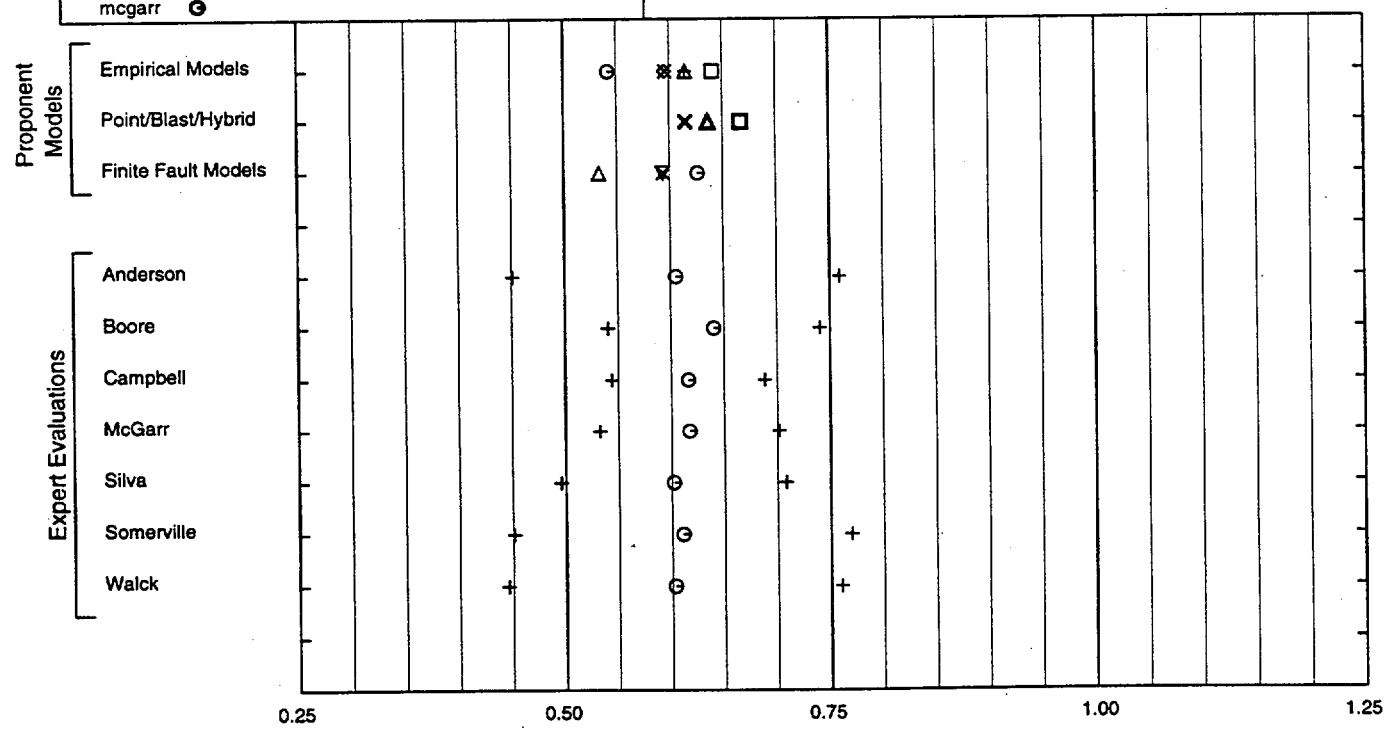
case 18, M= 5.8, deep, xd= 5 km, HW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

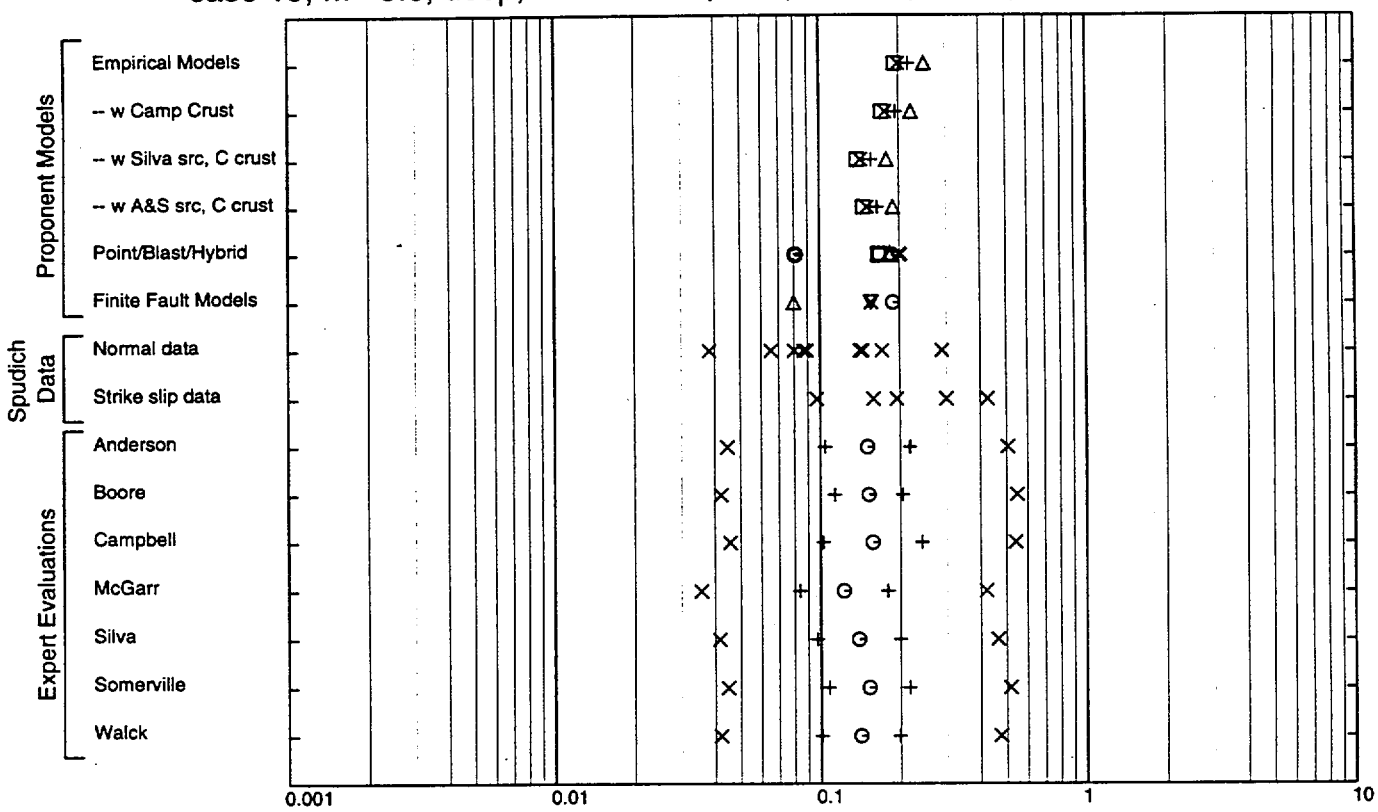
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

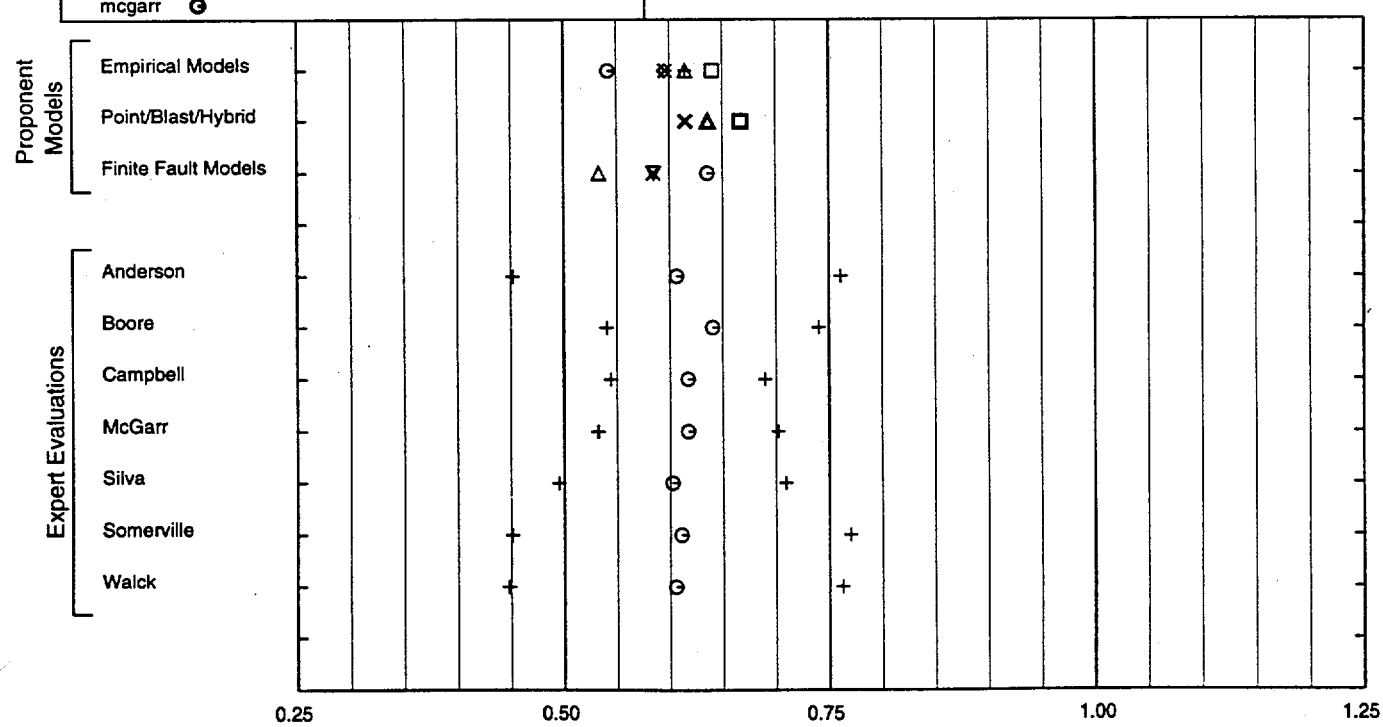
case 19, M= 5.8, deep, xd= -5 km, FW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

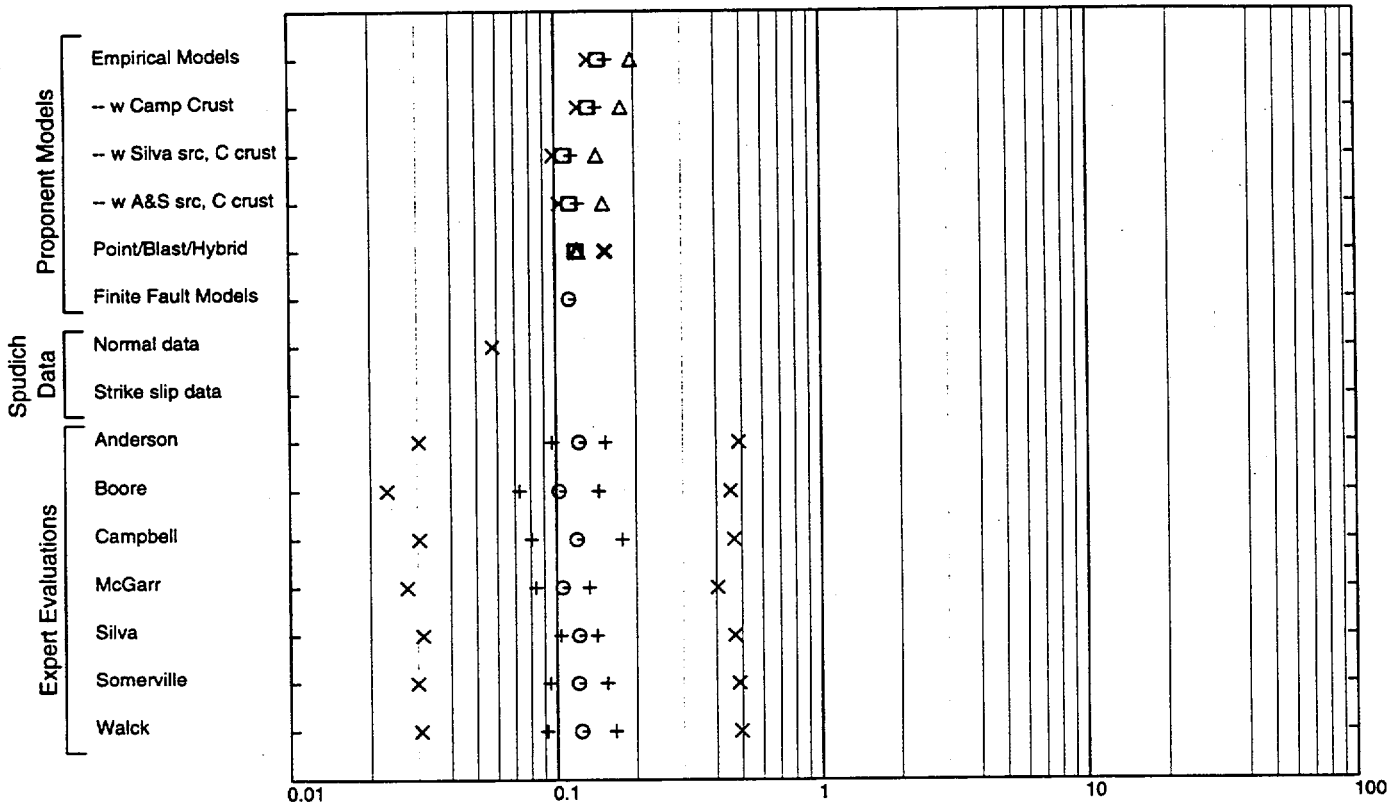
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

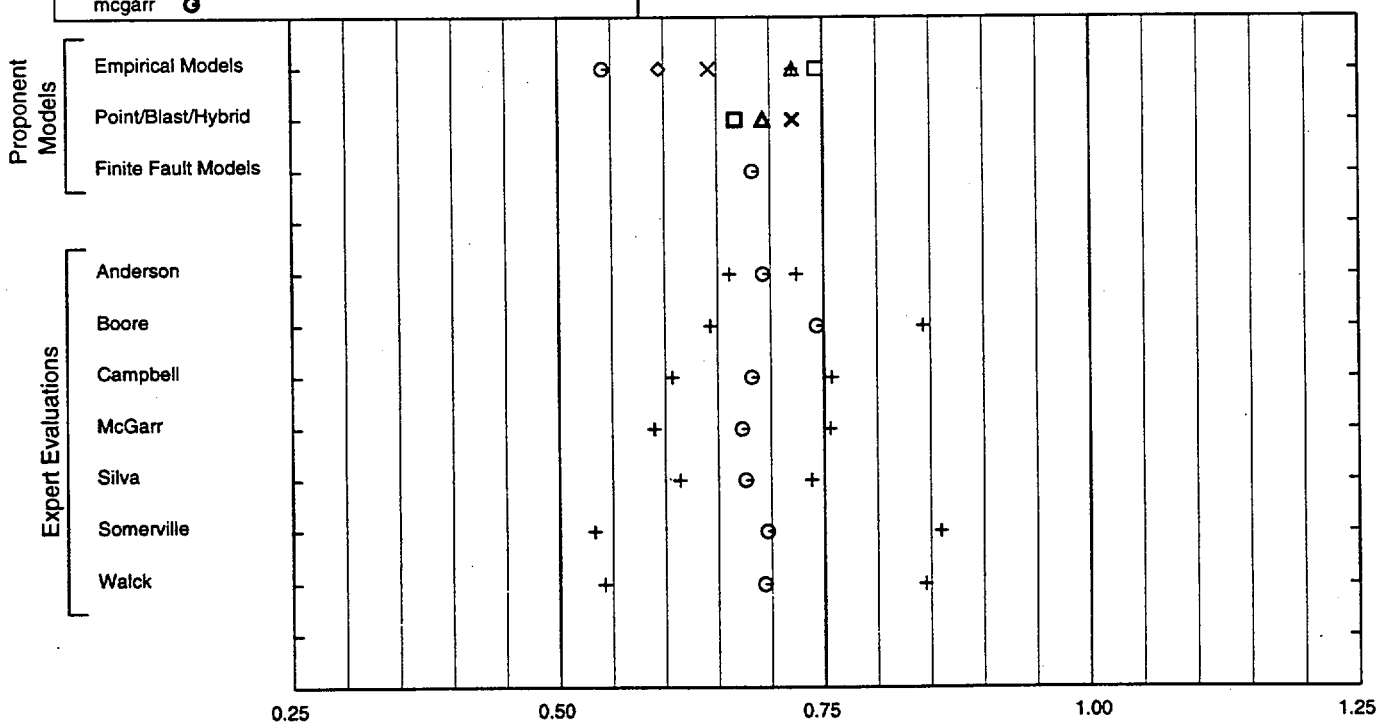
case 20, M= 5.0, shallow, xd= 10 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

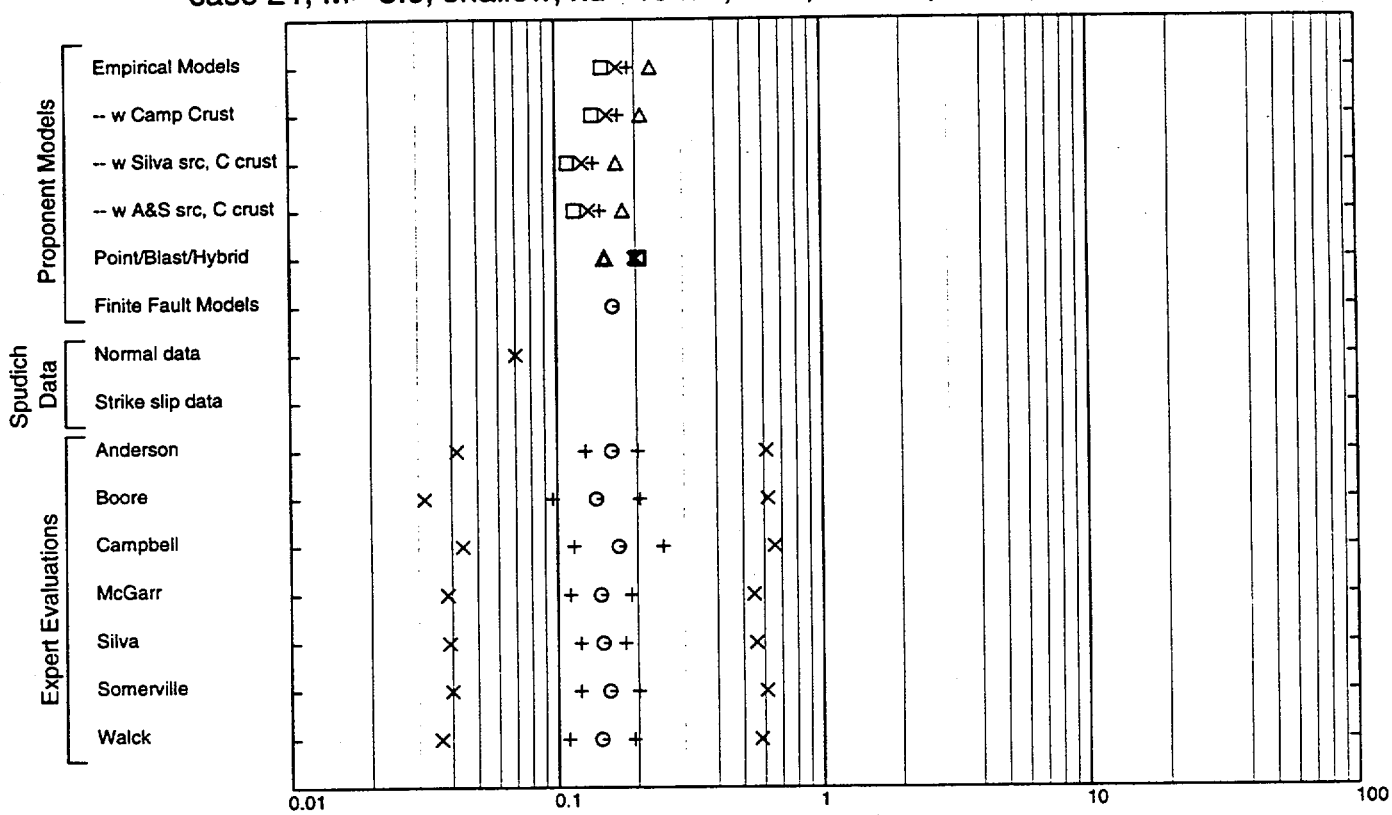
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

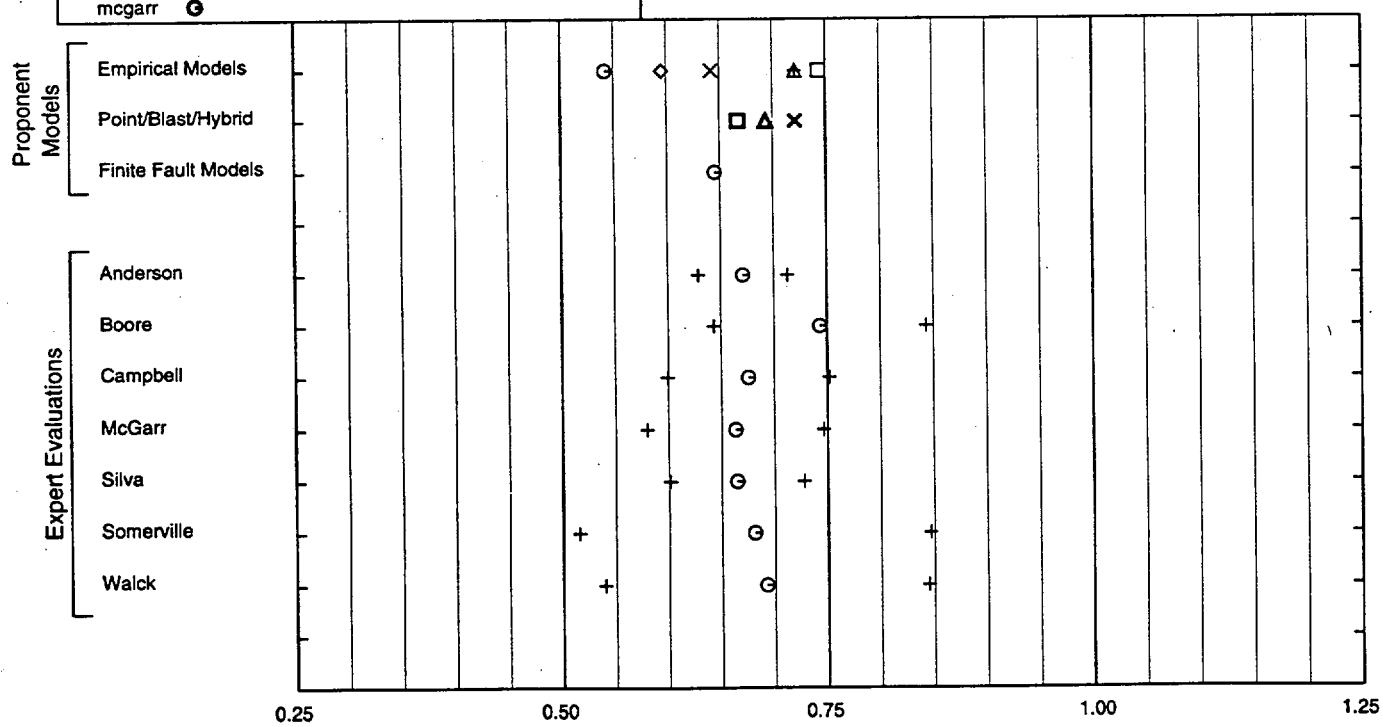
case 21, M= 5.0, shallow, xd= 10 km, HW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

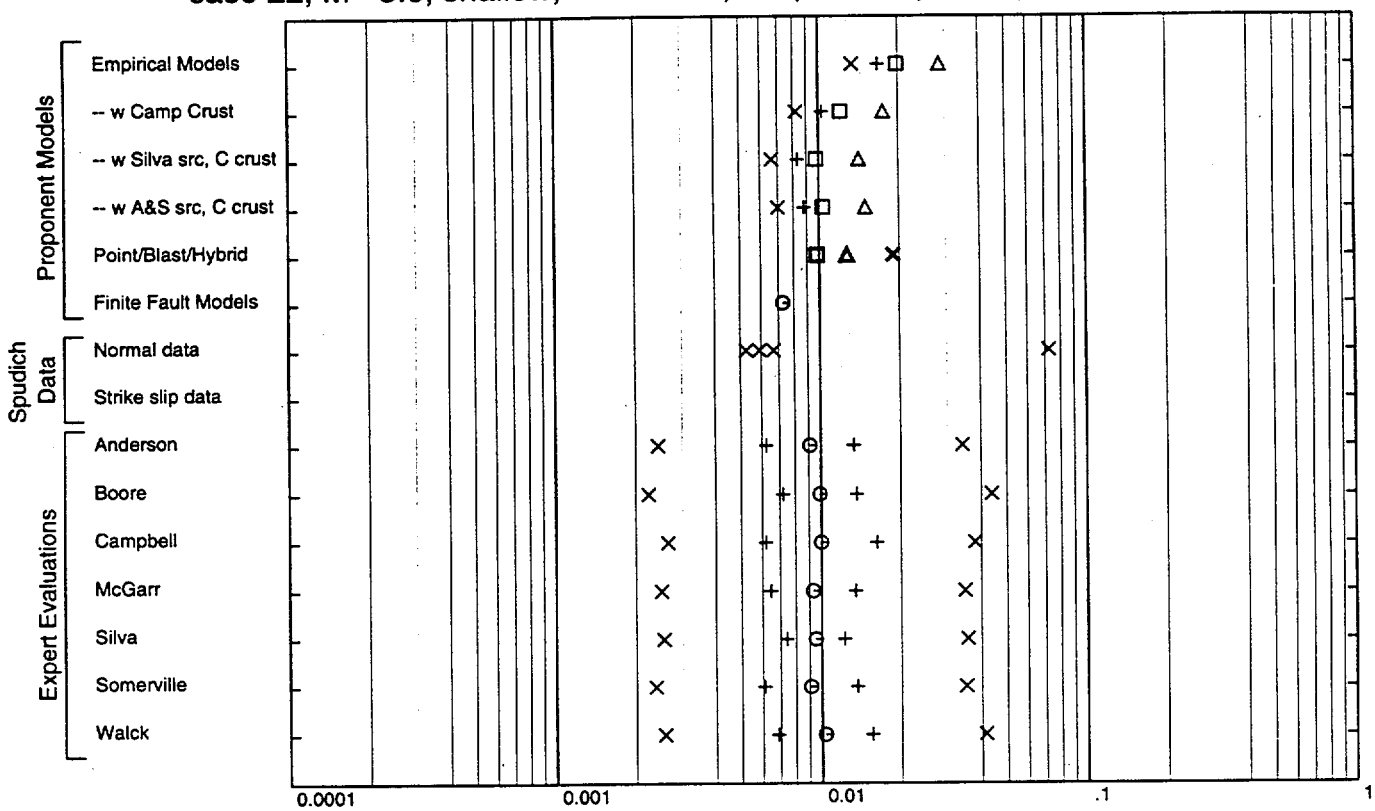
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

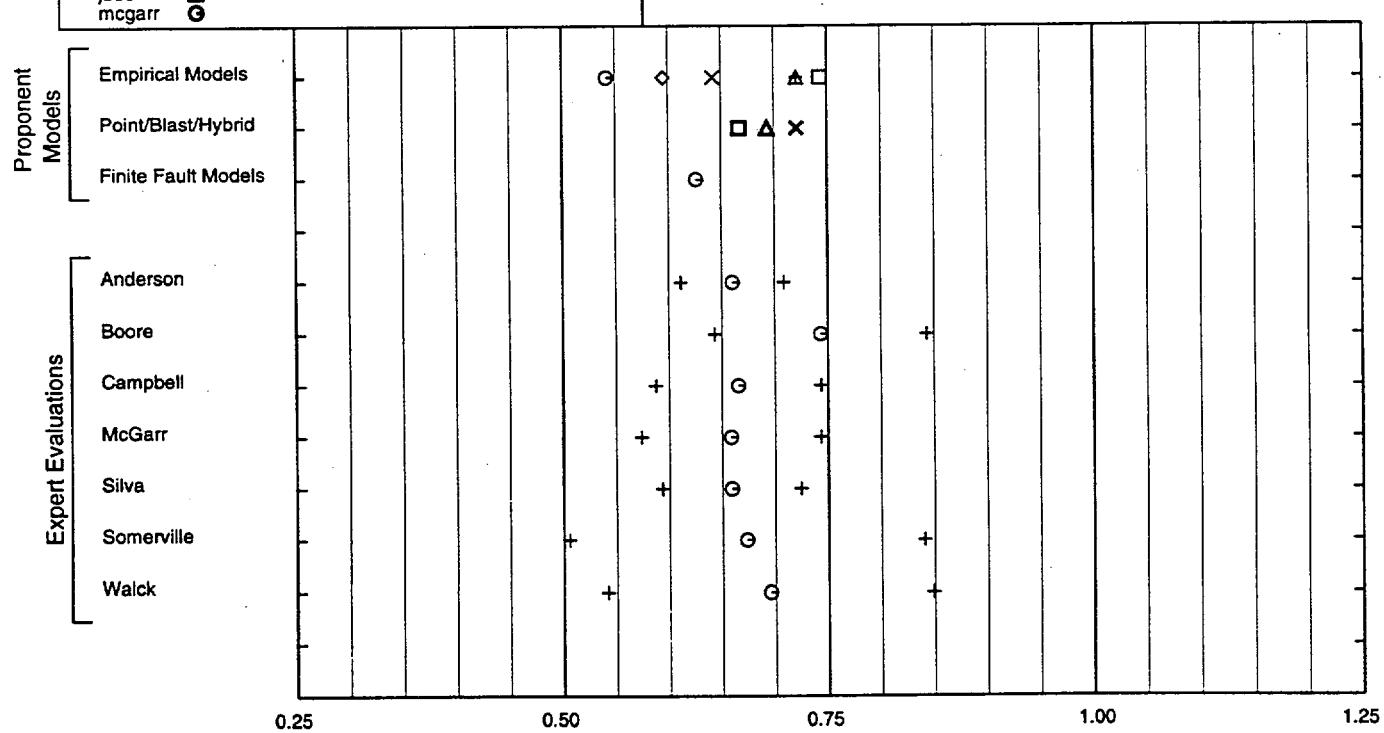
case 22, M= 5.0, shallow, xd= 50 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

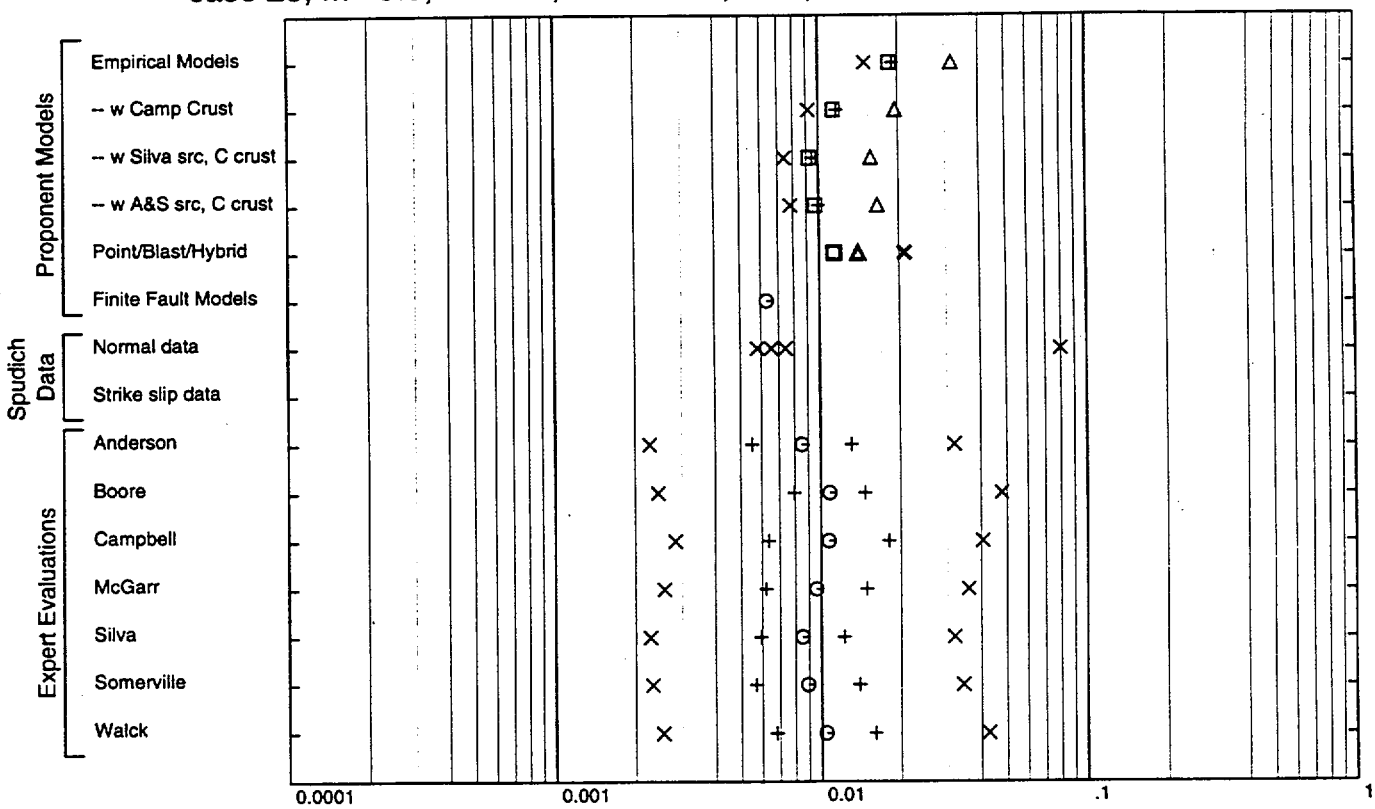
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

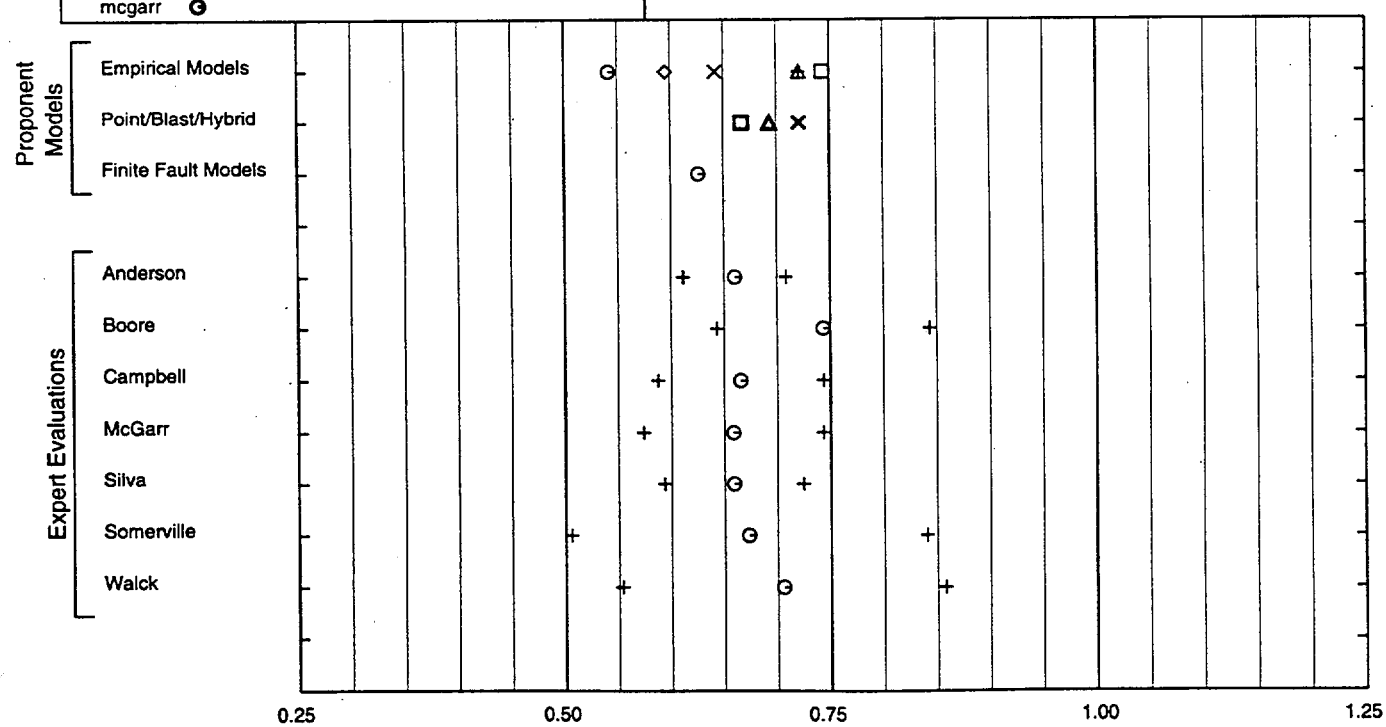
case 23, M= 5.0, shallow, xd= 50 km, HW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

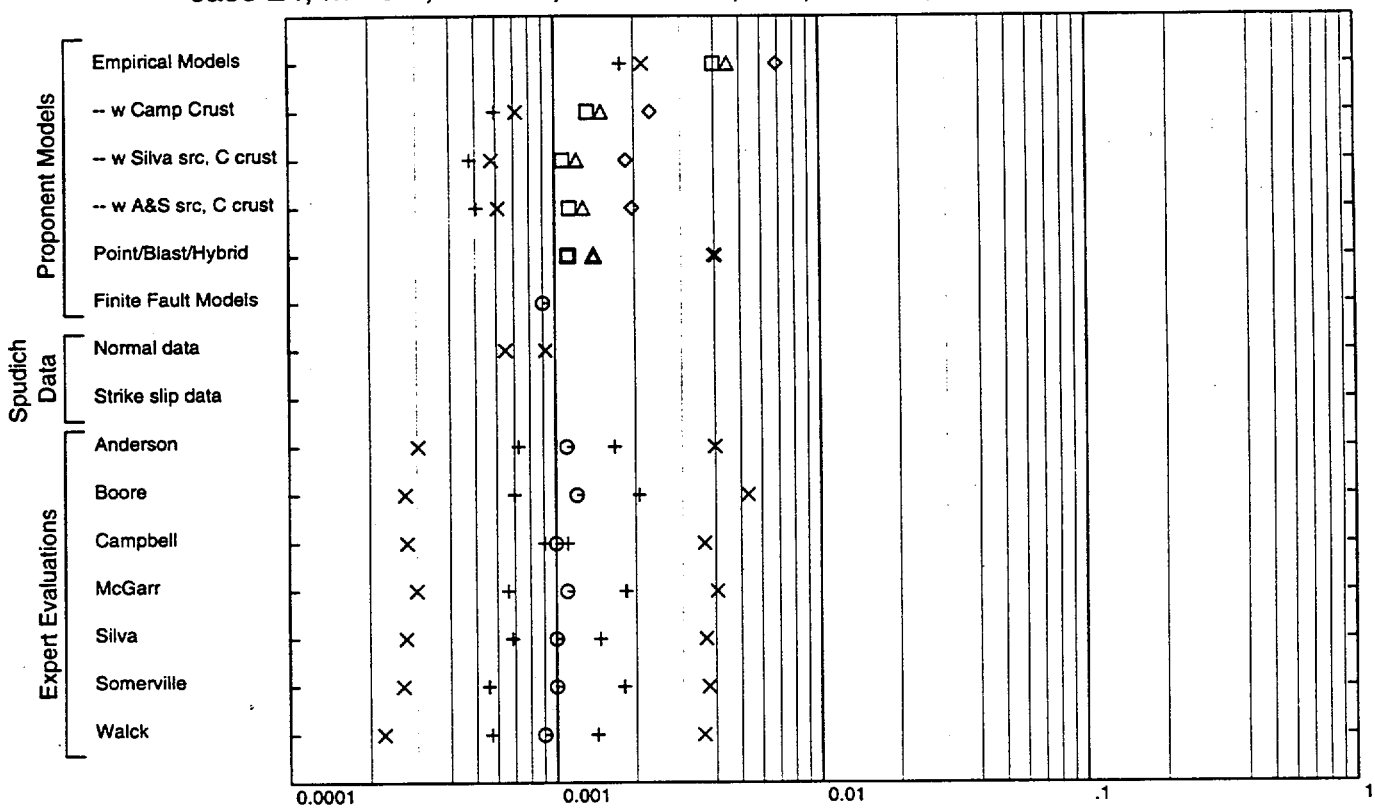
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

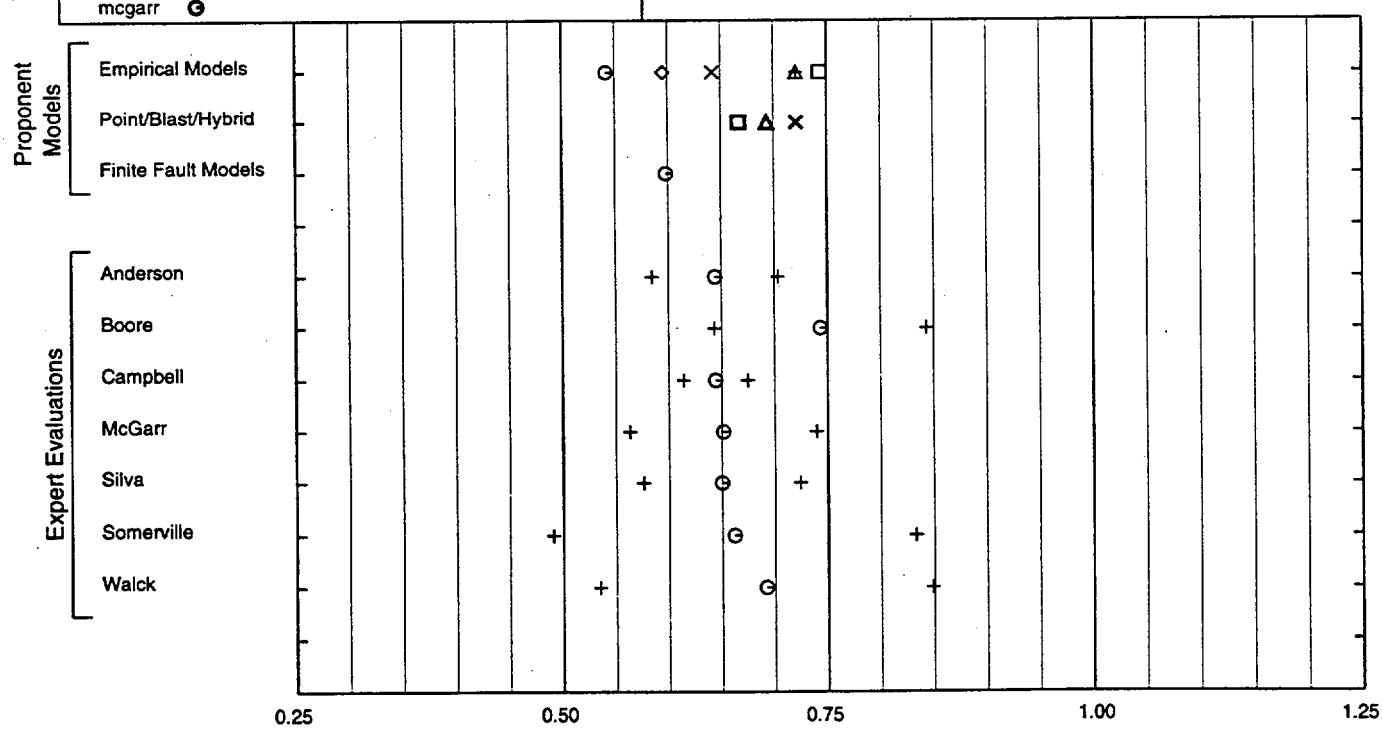
case 24, M= 5.0, shallow, xd=160 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

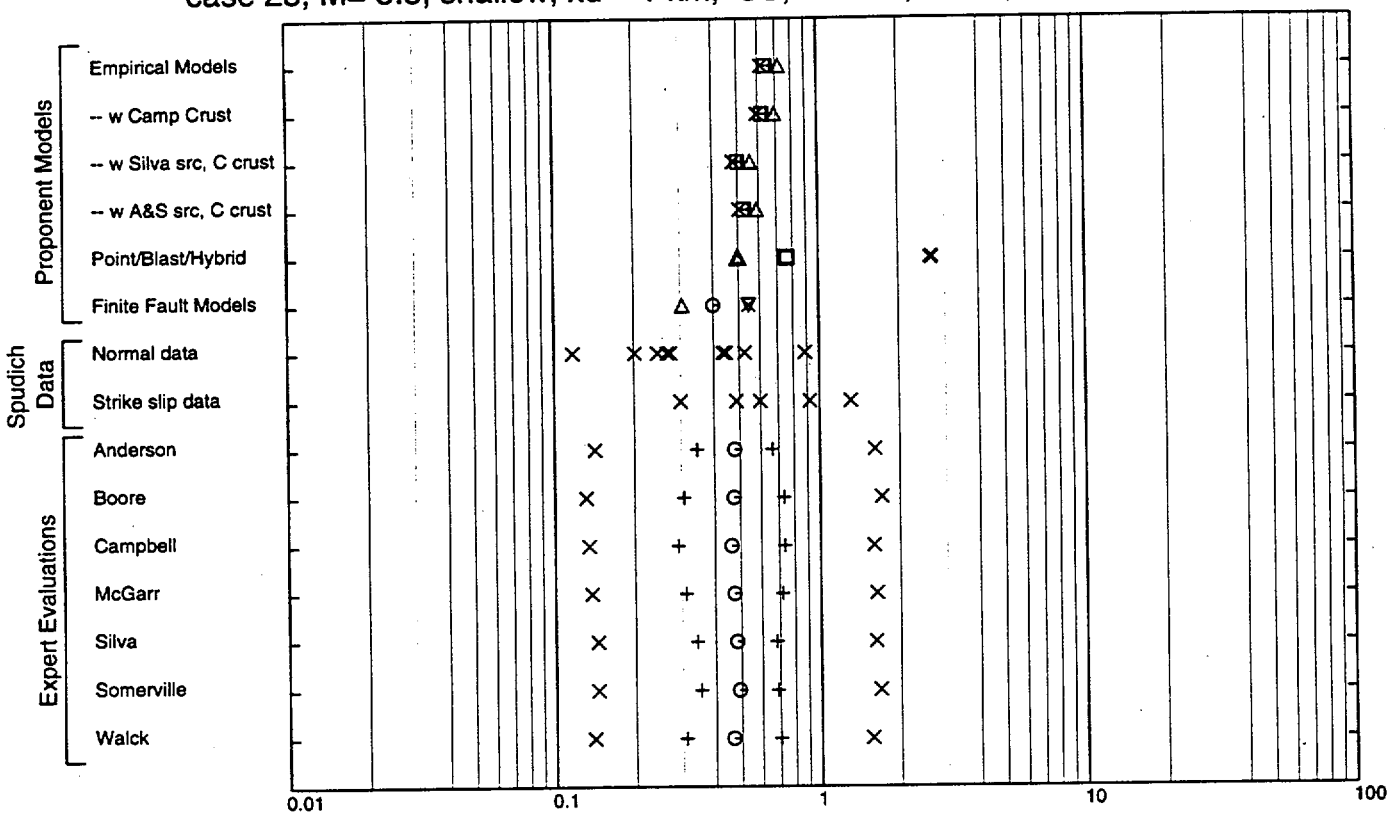
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

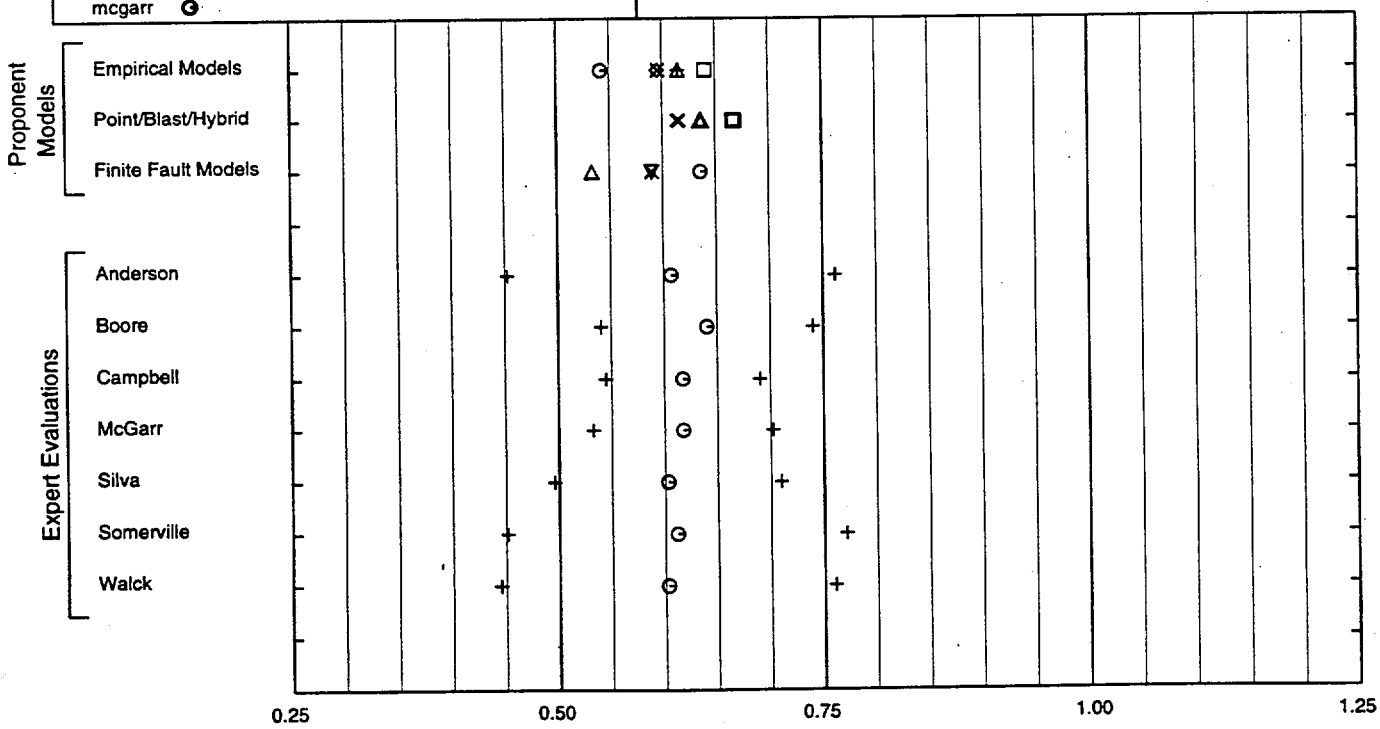
case 25, M= 5.8, shallow, xd= 1 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



LEGEND

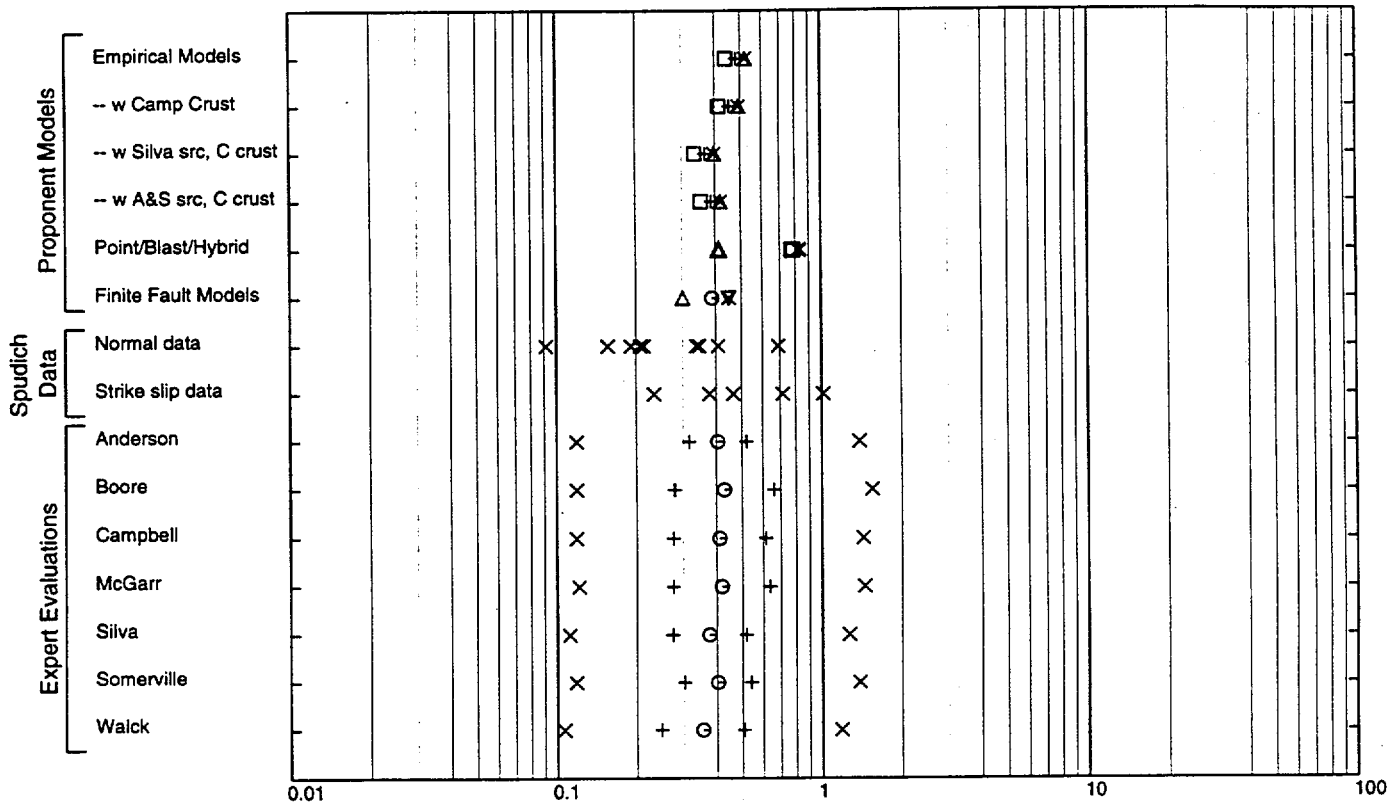
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

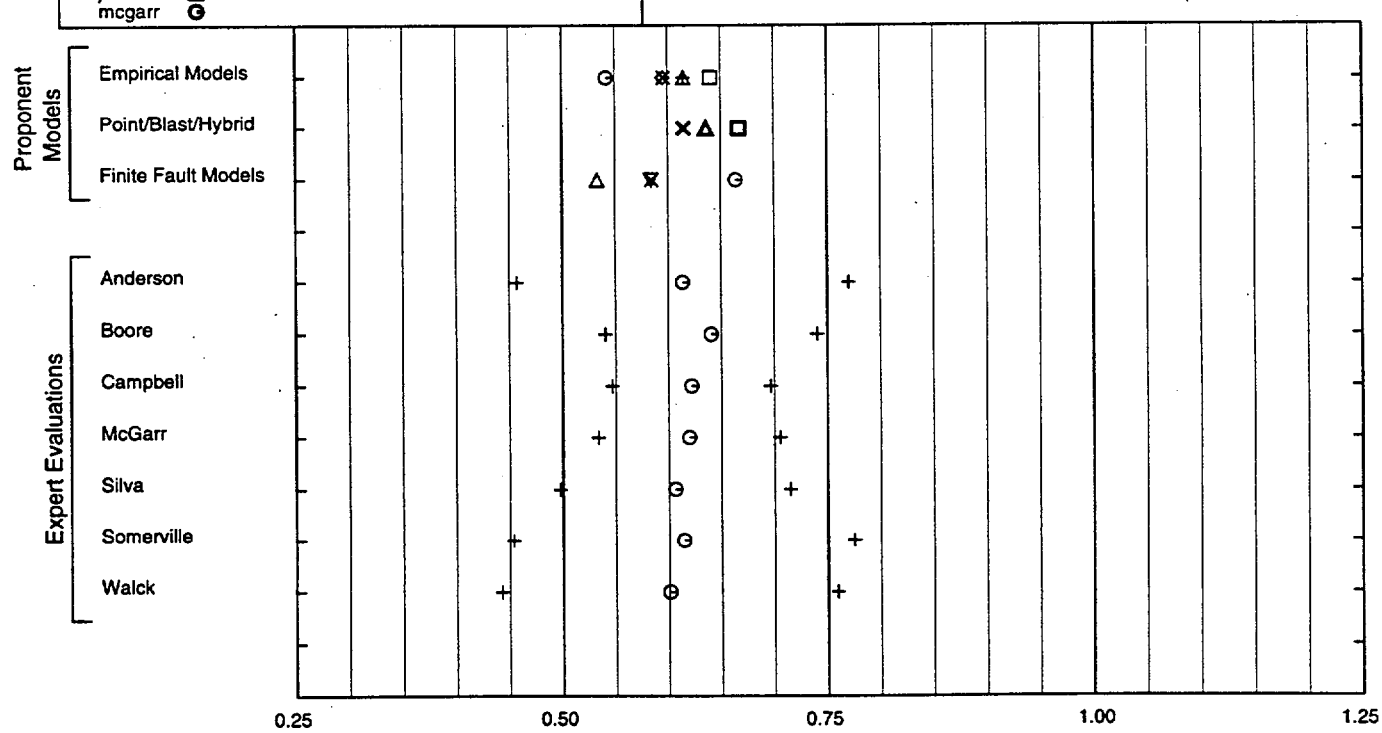
case 26, M= 5.8, shallow, xd= 5 km, HW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

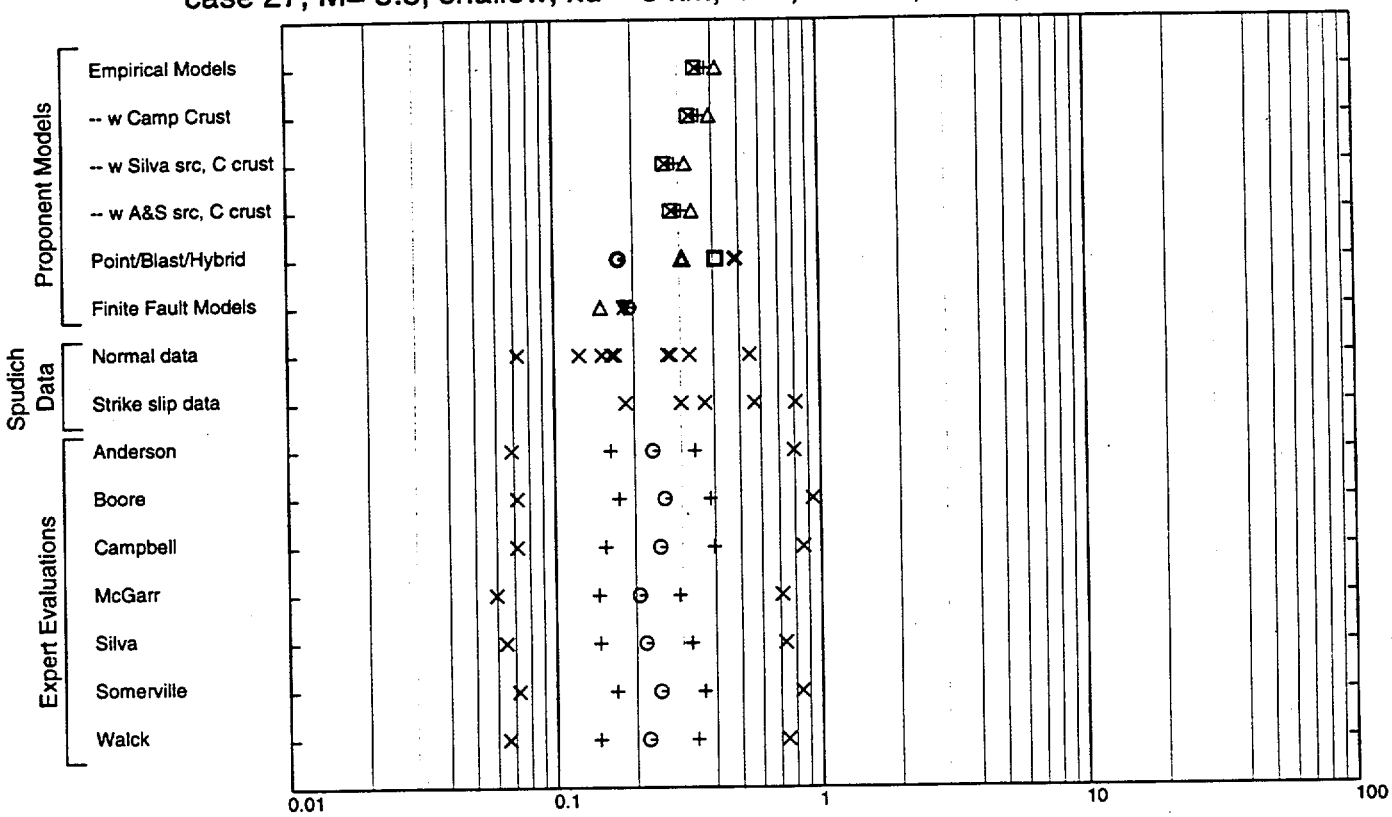
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

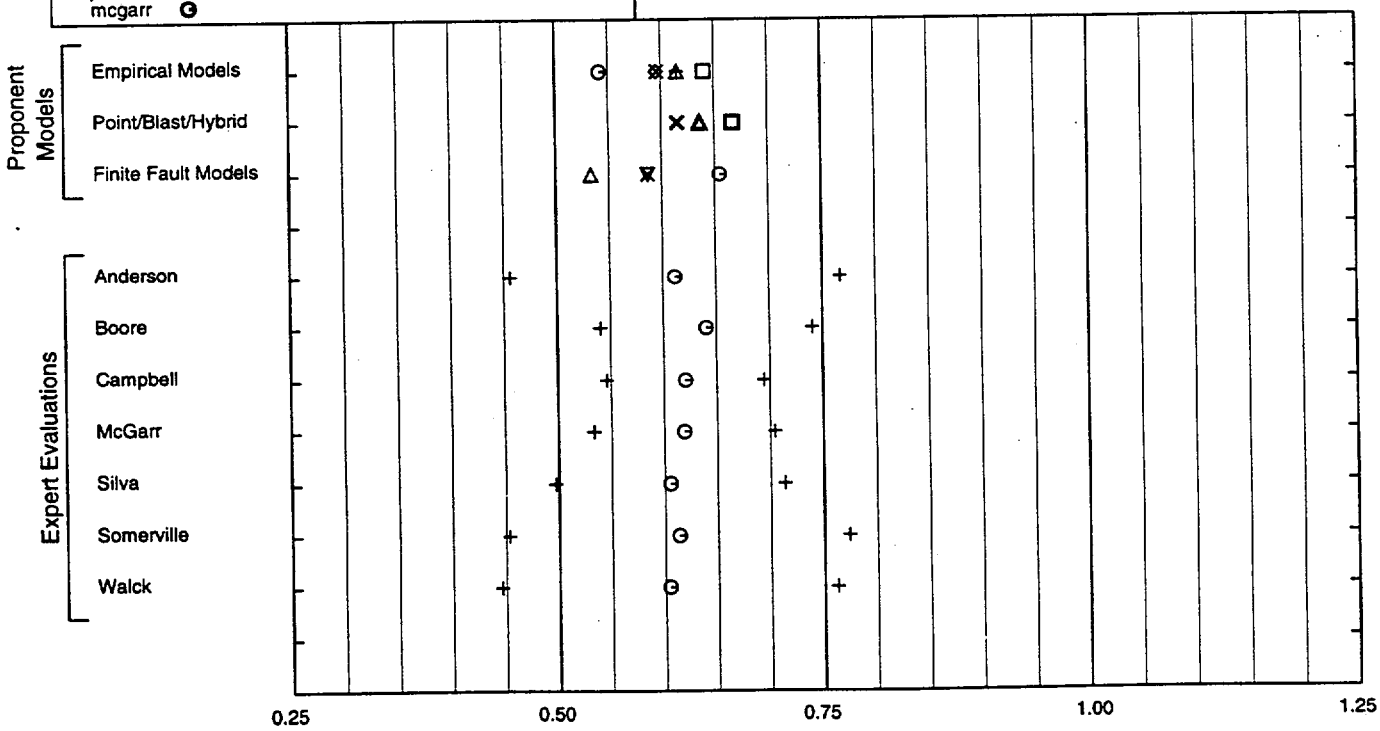
case 27, M= 5.8, shallow, xd= -5 km, FW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

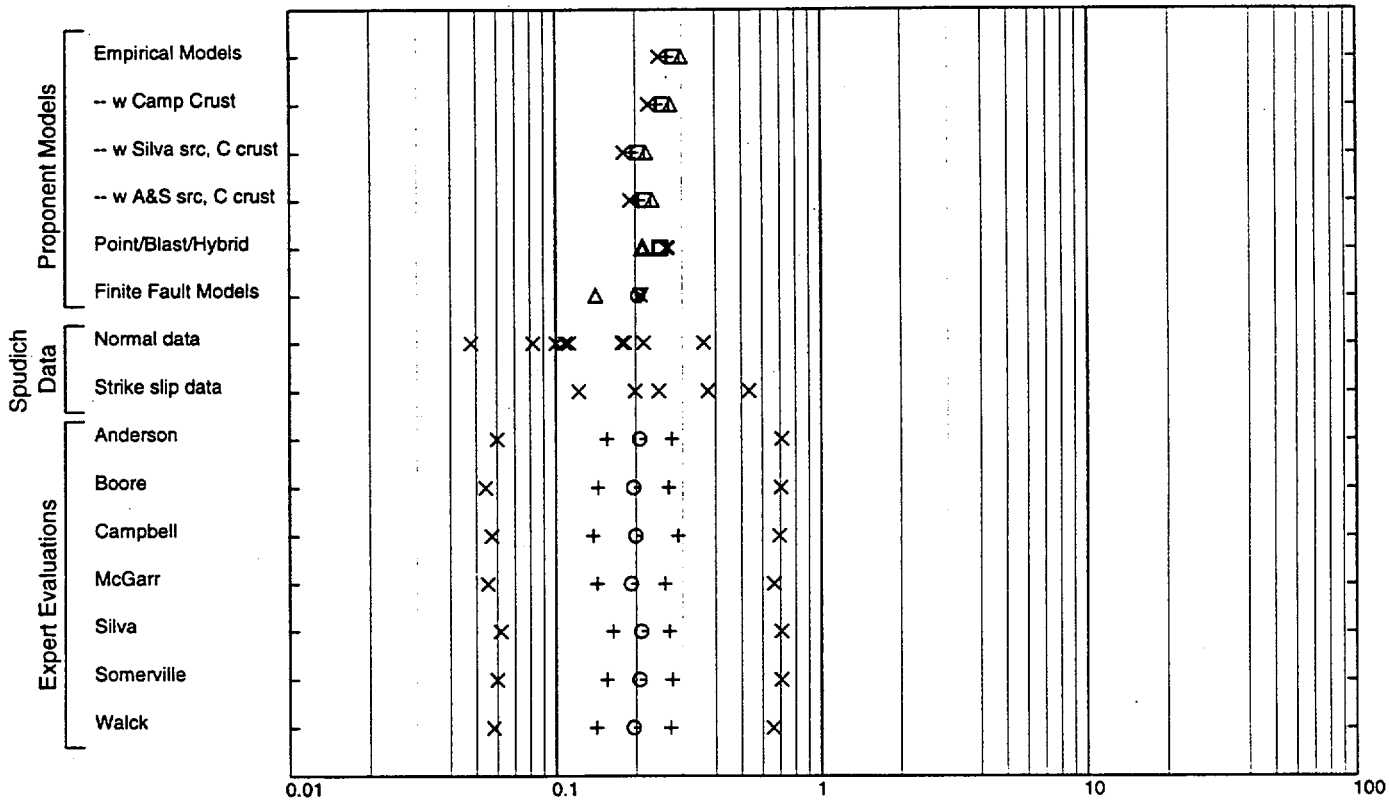
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

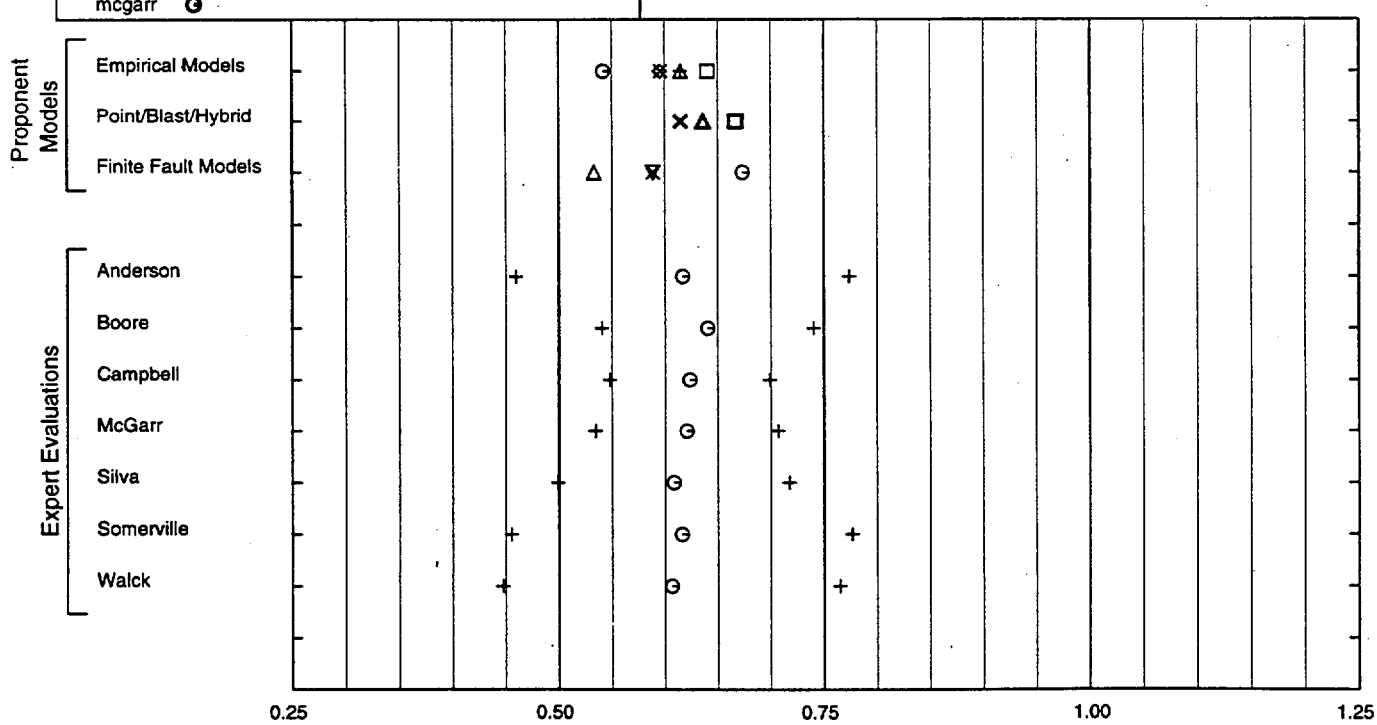
case 28, M= 5.8, shallow, xd= 10 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

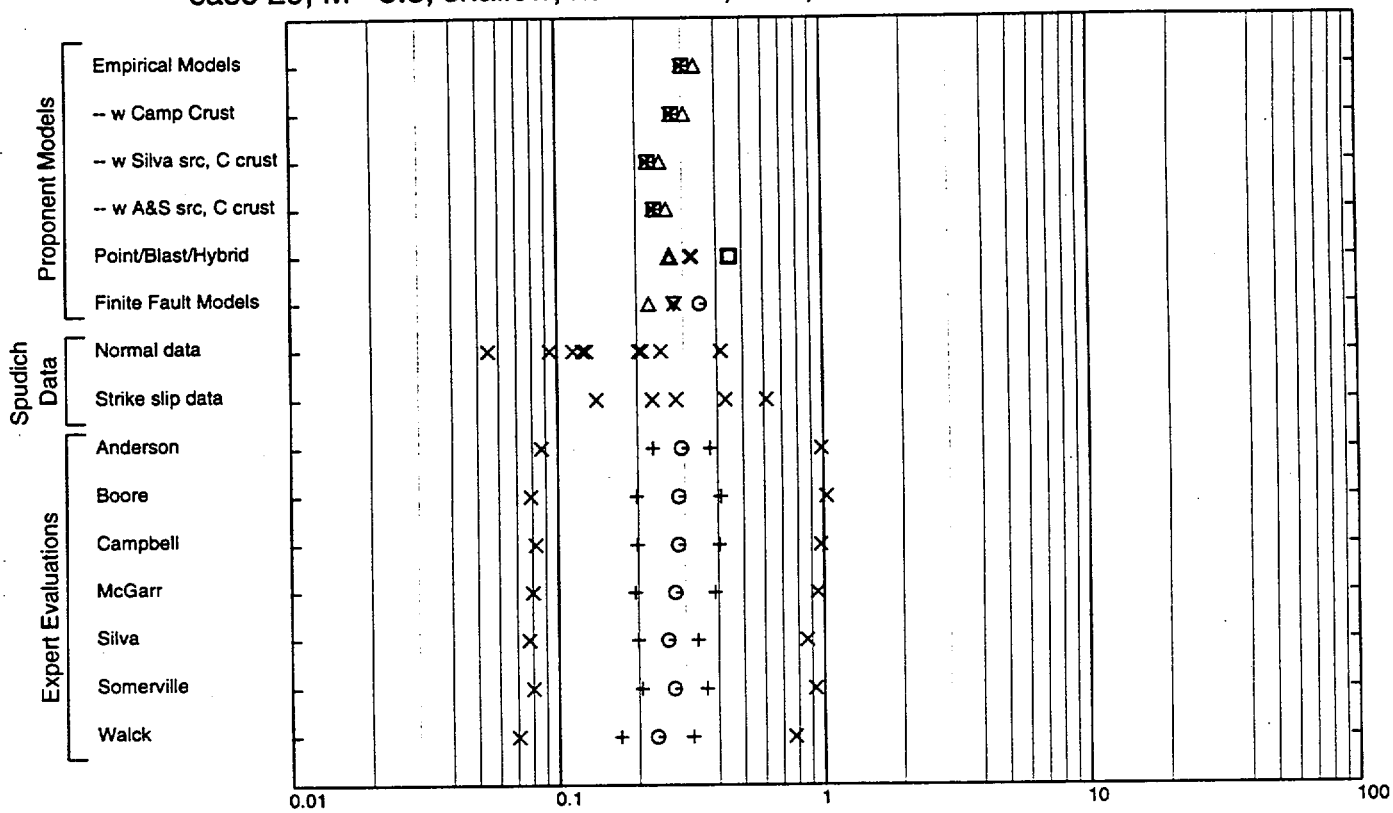
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

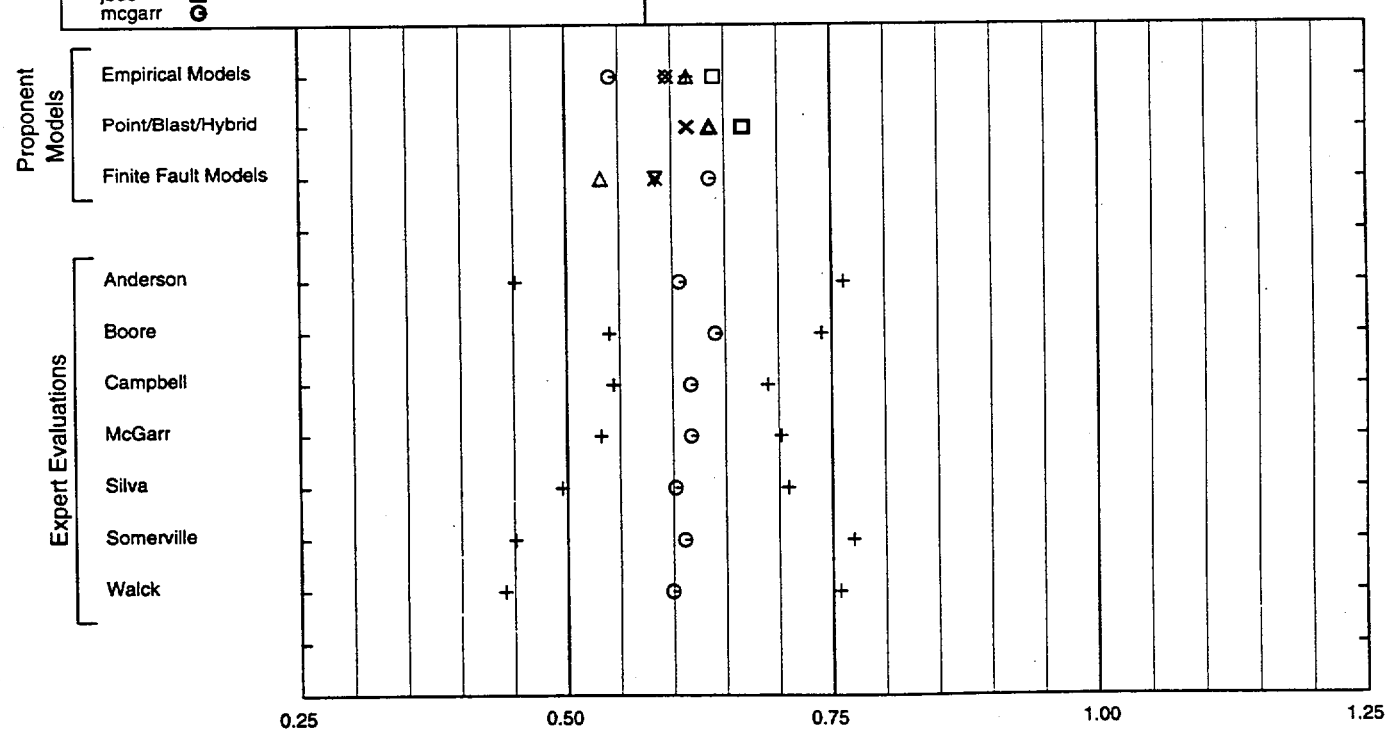
case 29, M= 5.8, shallow, xd= 10 km, HW, 20 Hz, HOR, 6/5/97, Rev 1



LEGEND

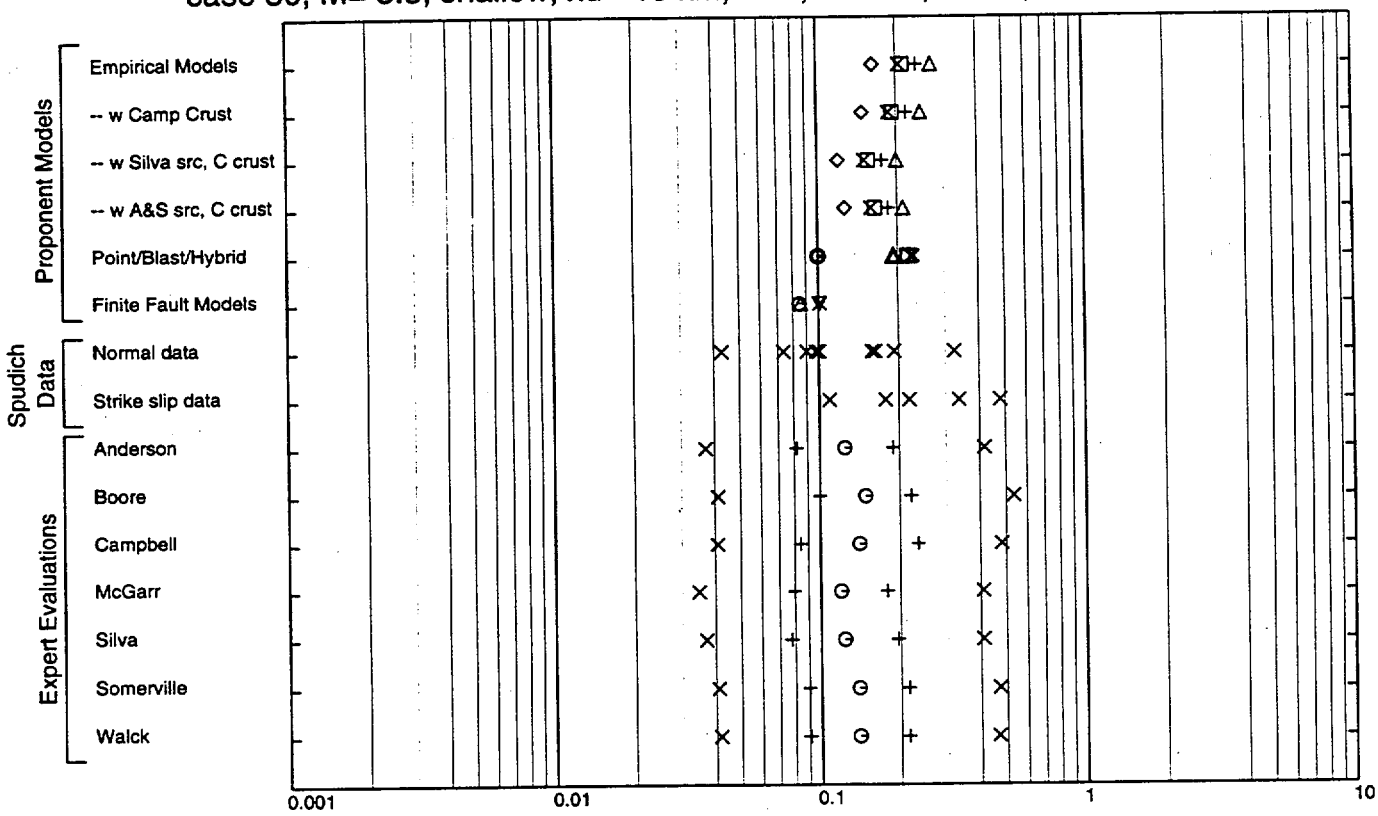
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

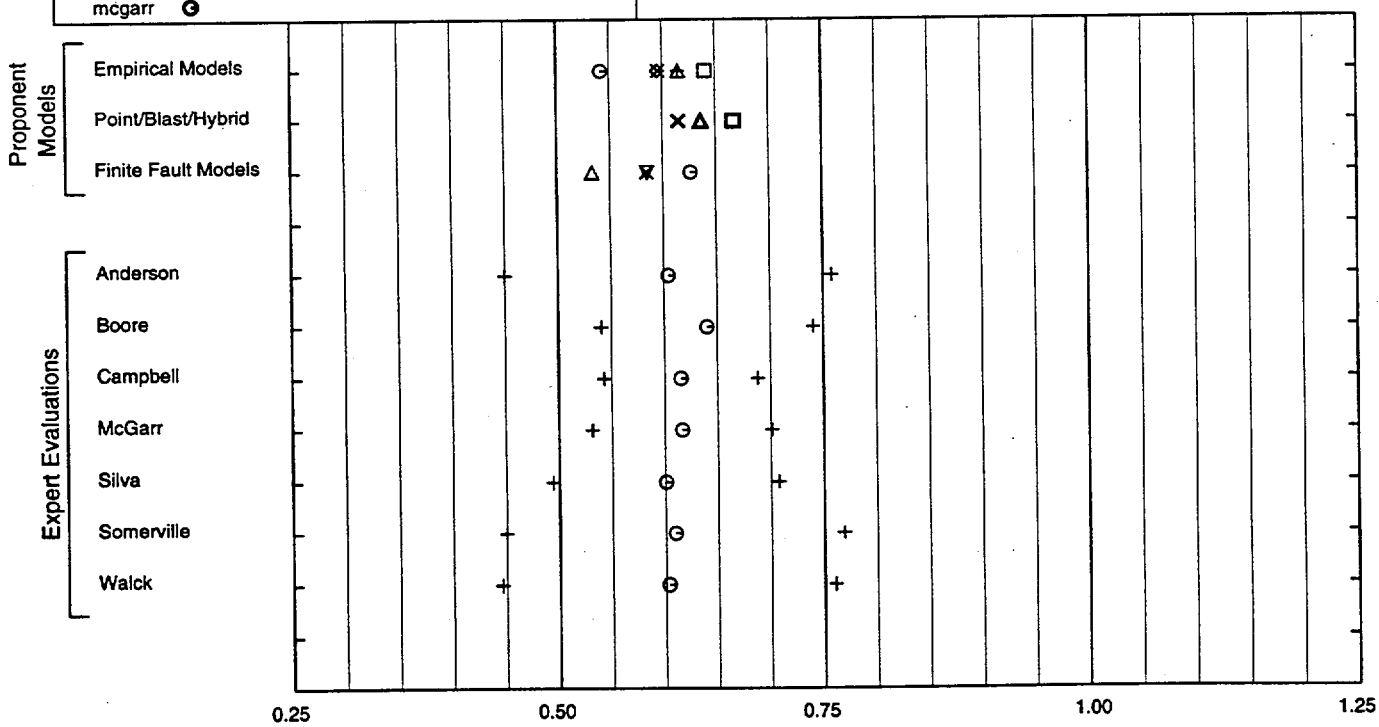
case 30, M= 5.8, shallow, xd=-10 km, FW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

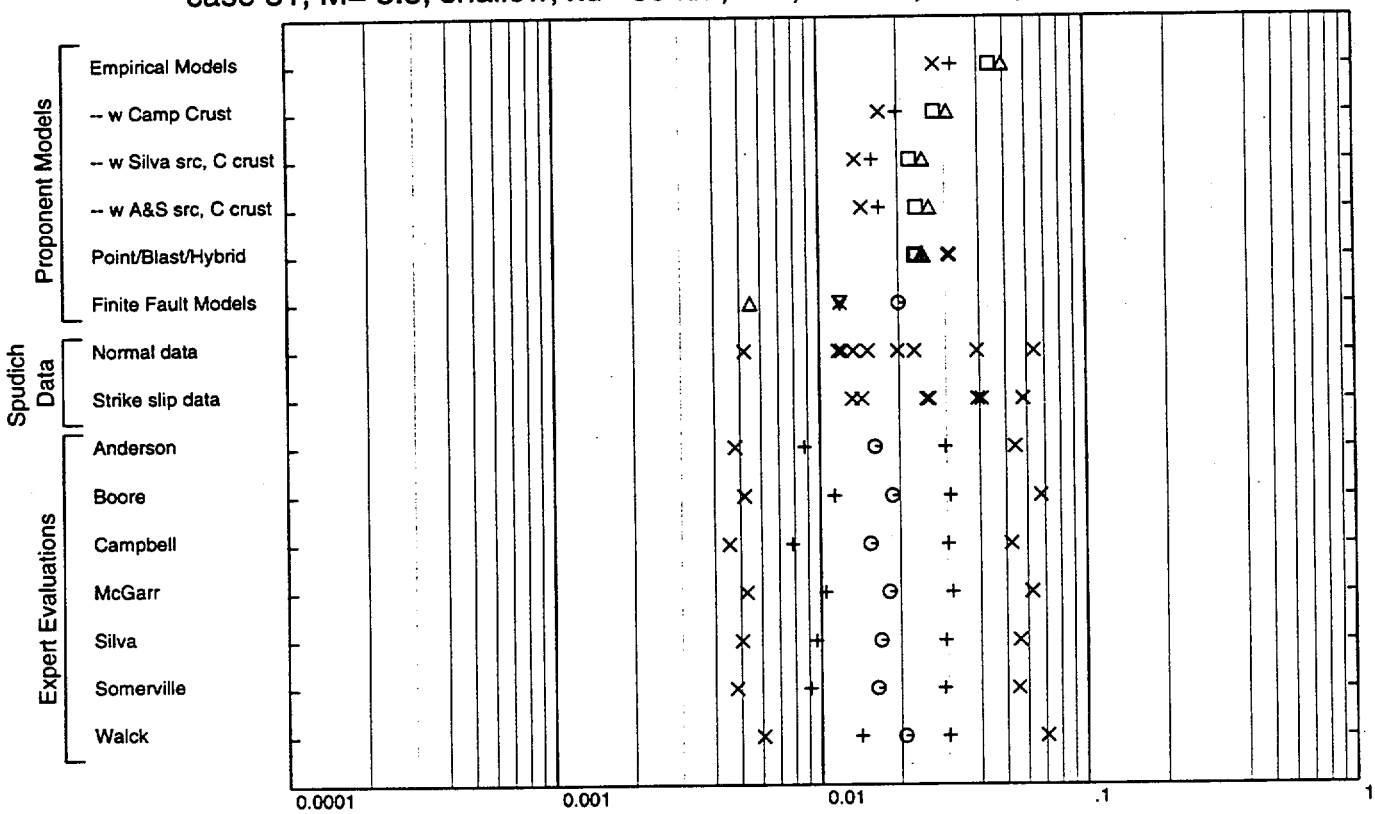
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

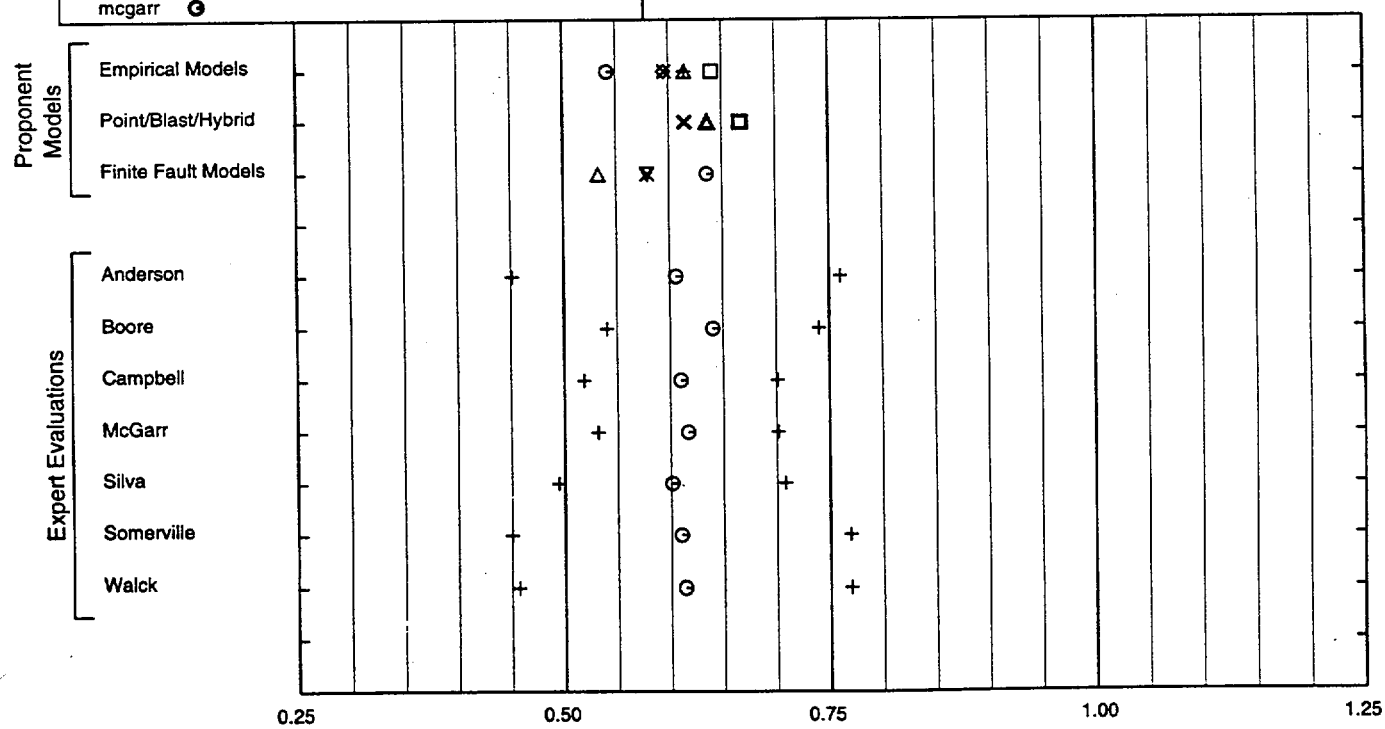
case 31, M= 5.8, shallow, xd= 50 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

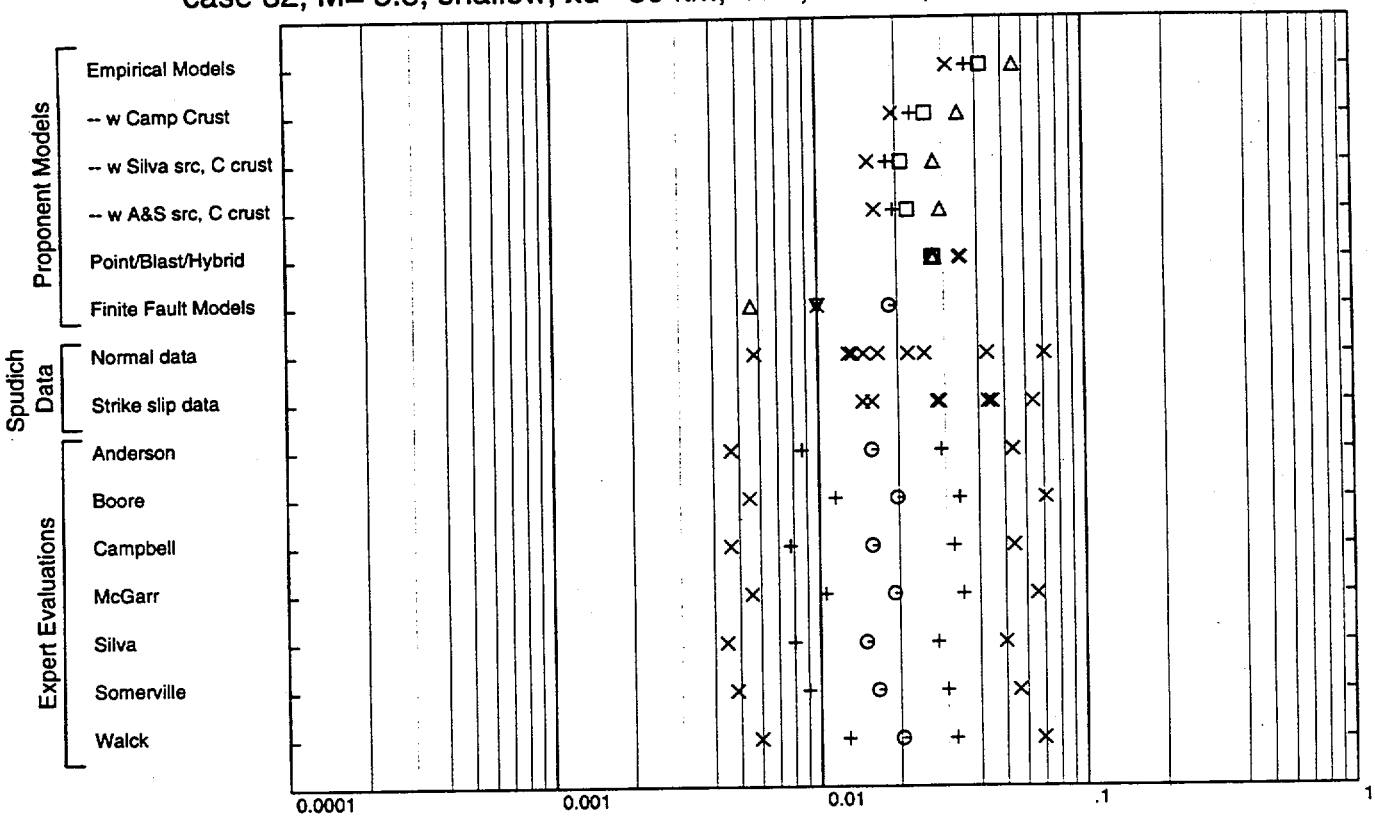
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

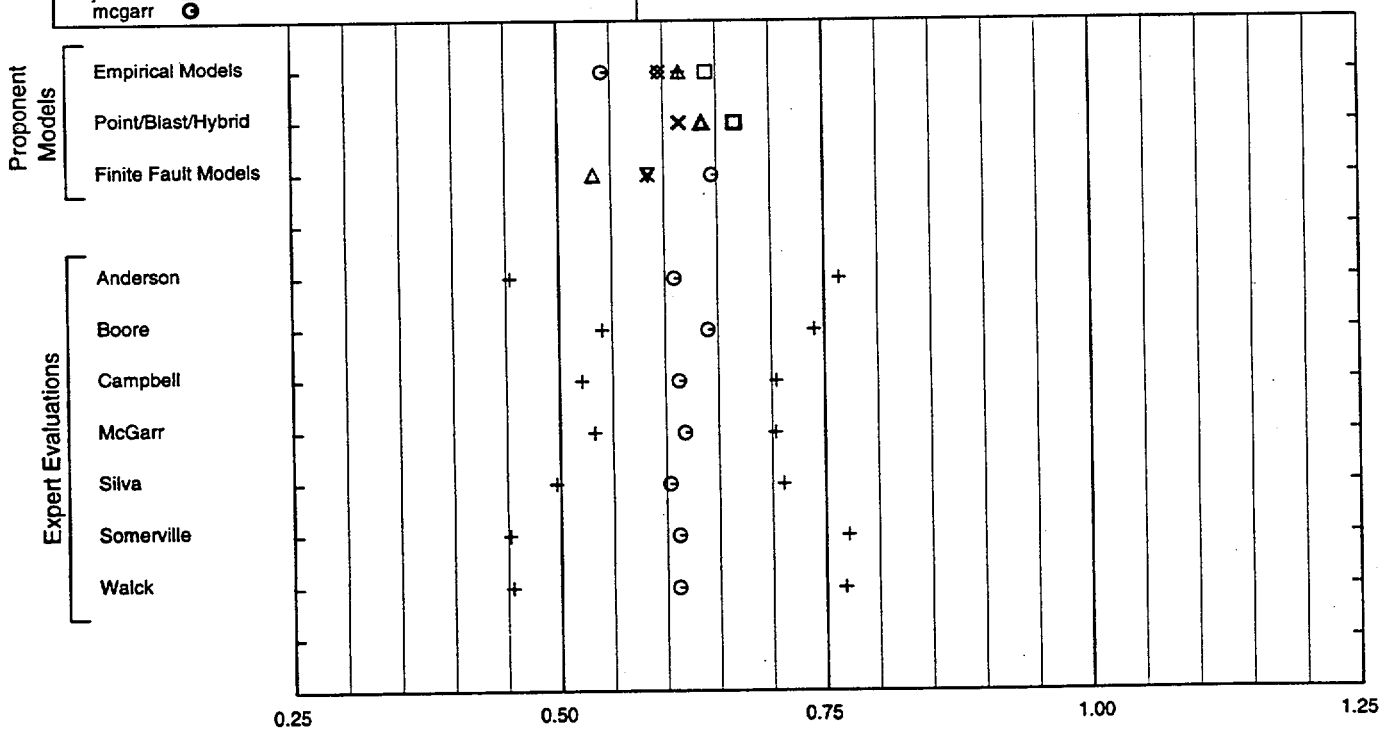
case 32, M= 5.8, shallow, xd= 50 km, HW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

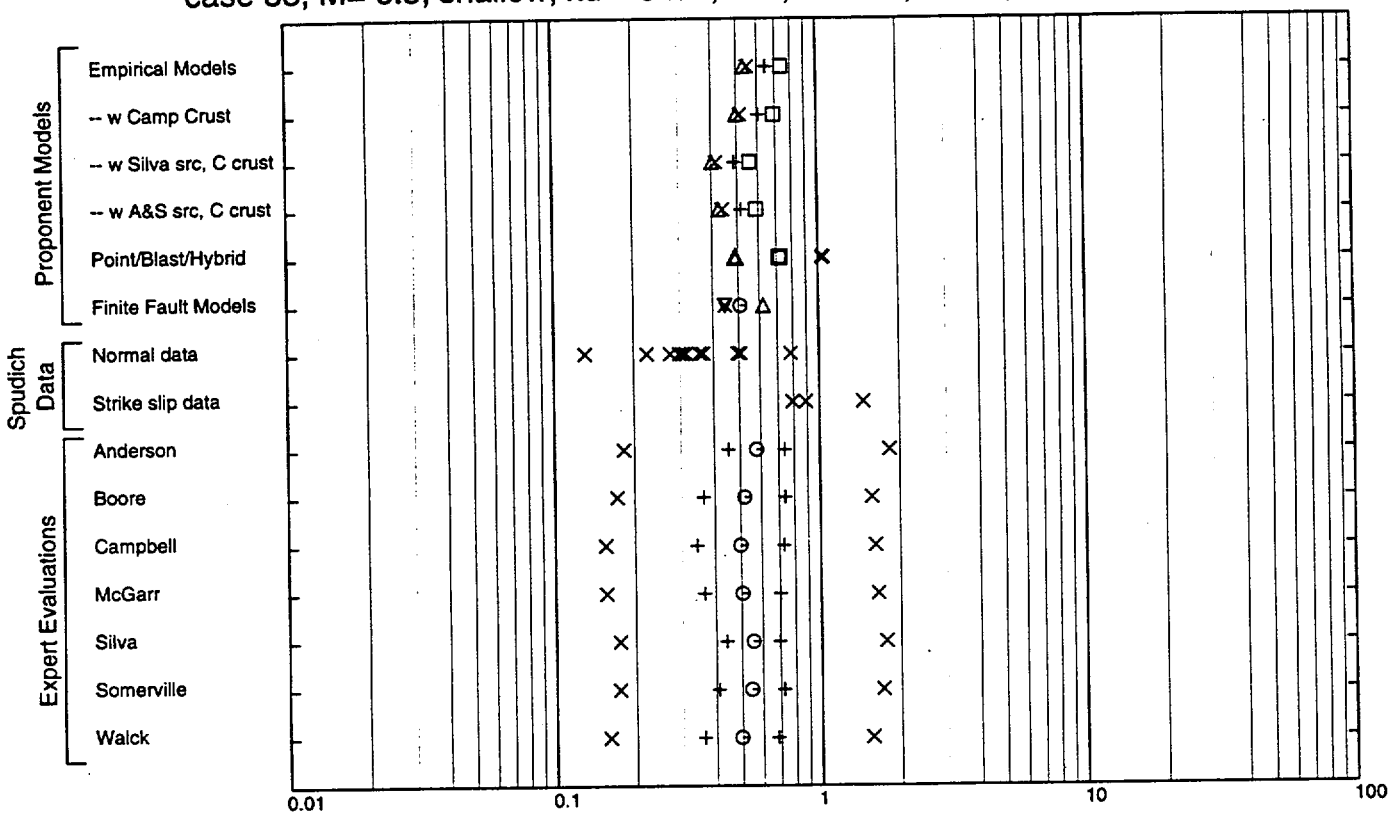
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

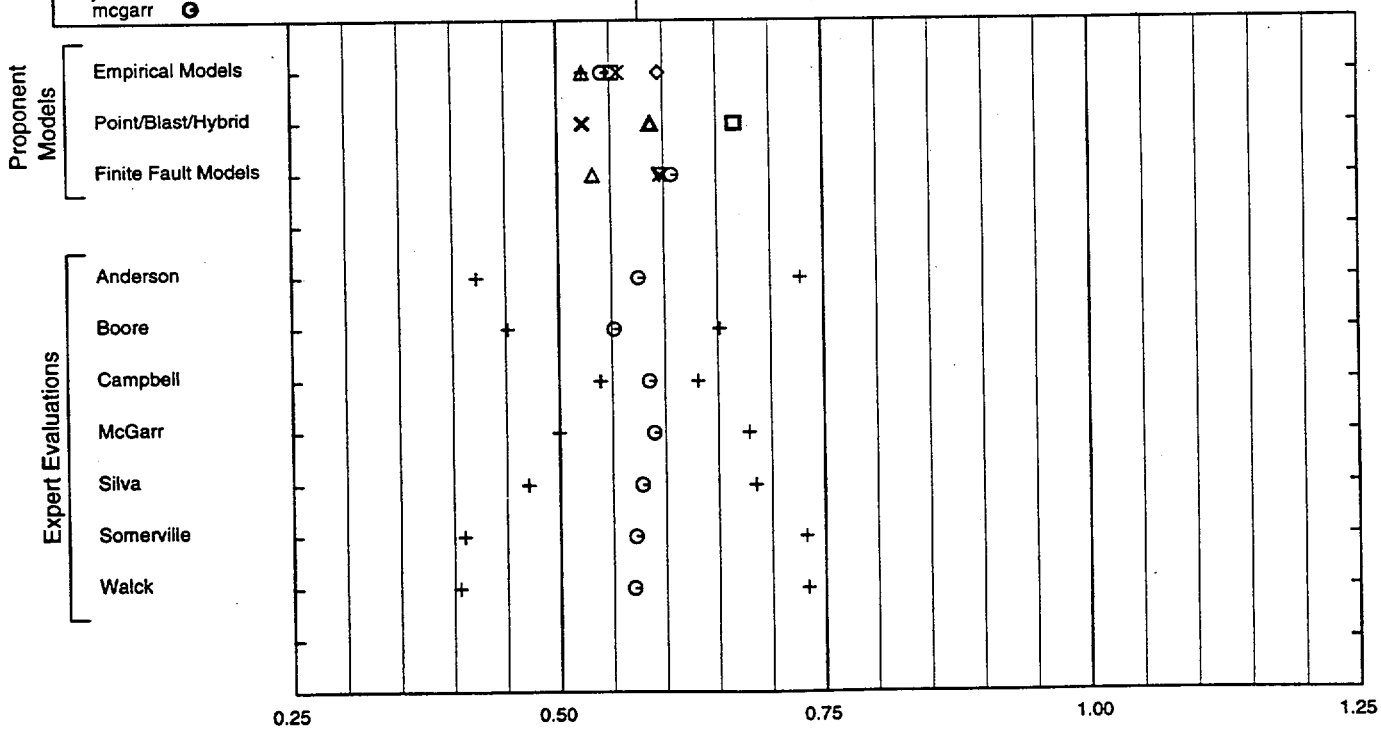
case 33, M= 6.5, shallow, xd= 5 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

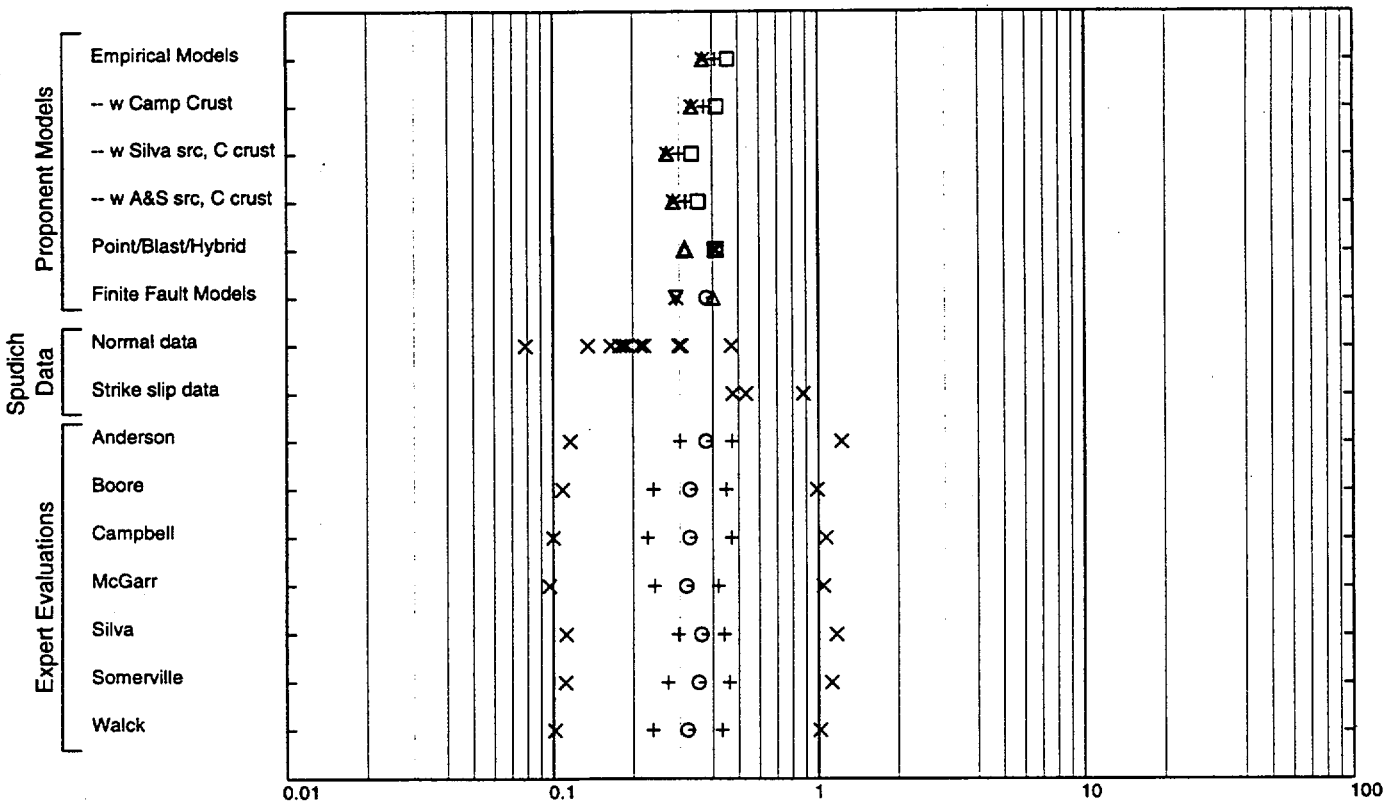
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

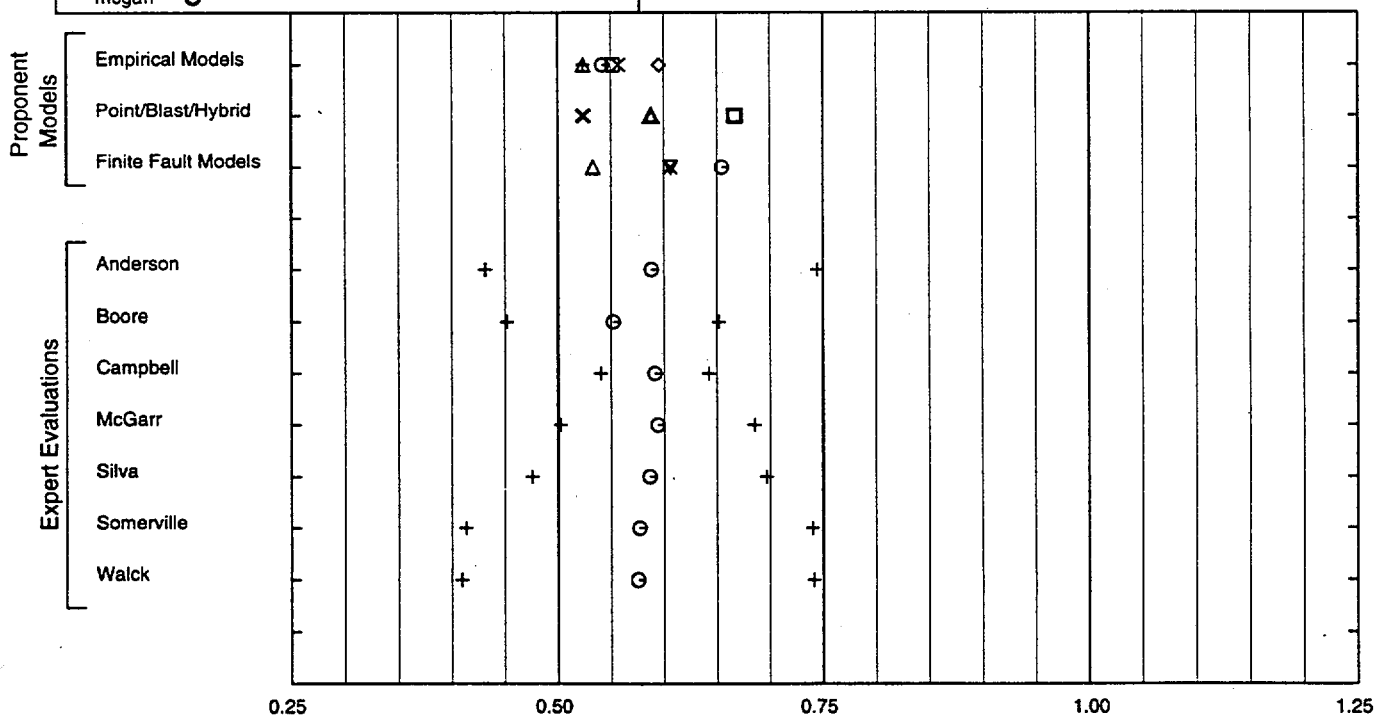
case 34, M= 6.5, shallow, xd= 10 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

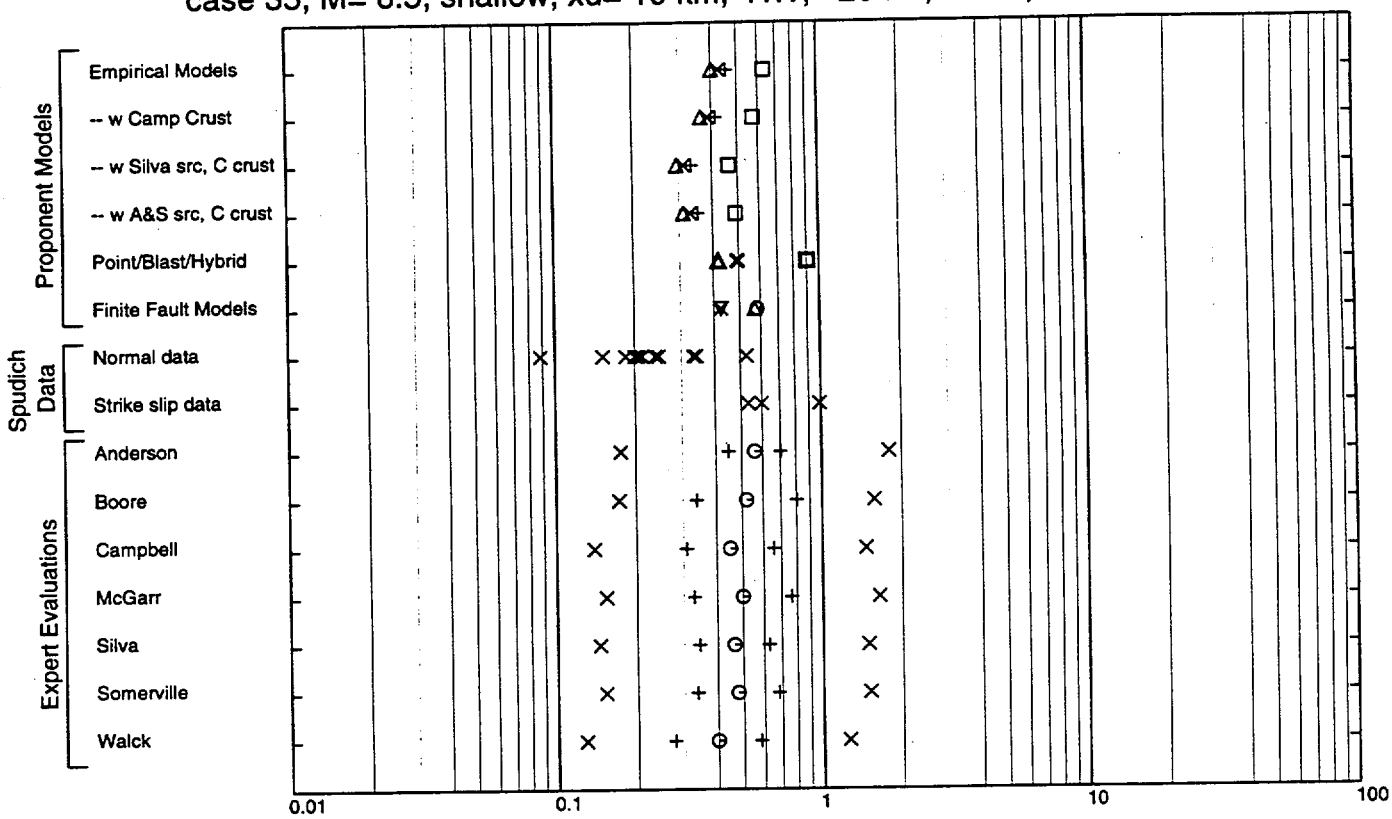
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

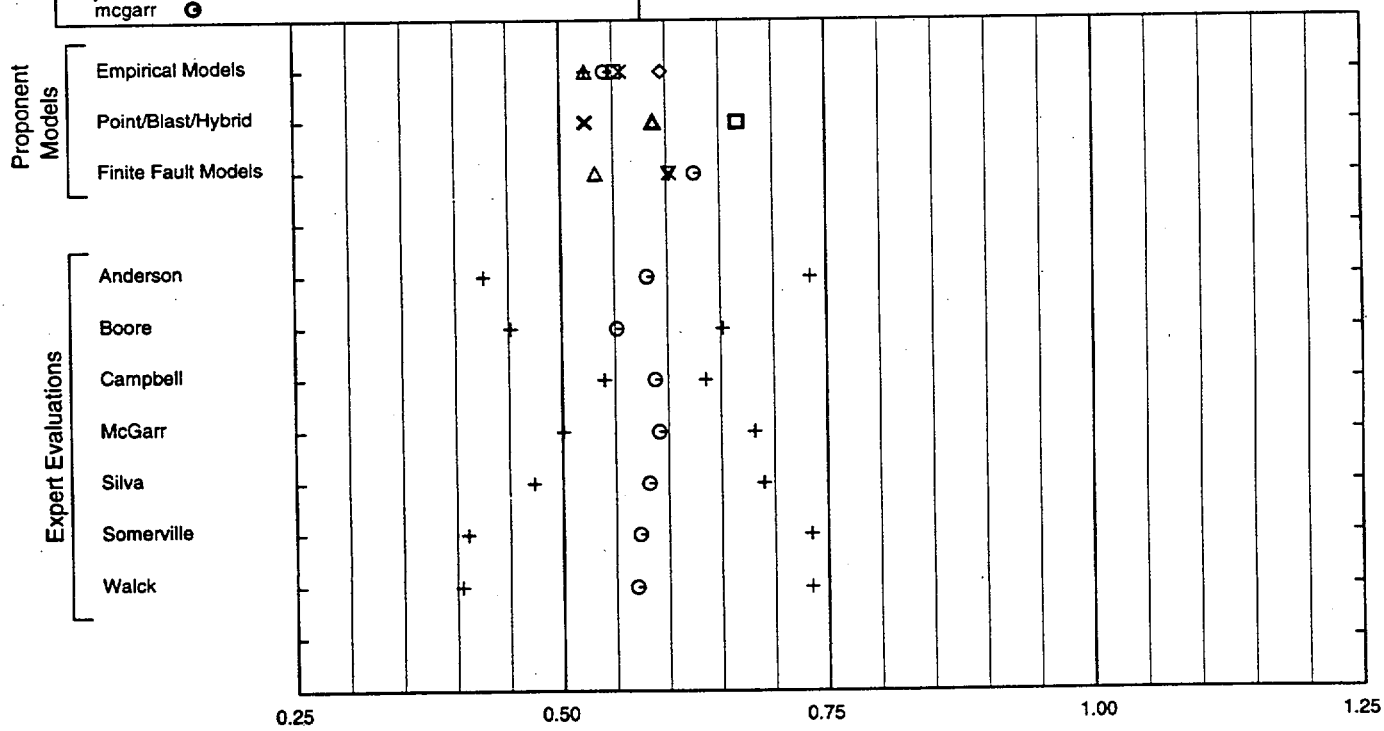
case 35, M= 6.5, shallow, xd= 10 km, HW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

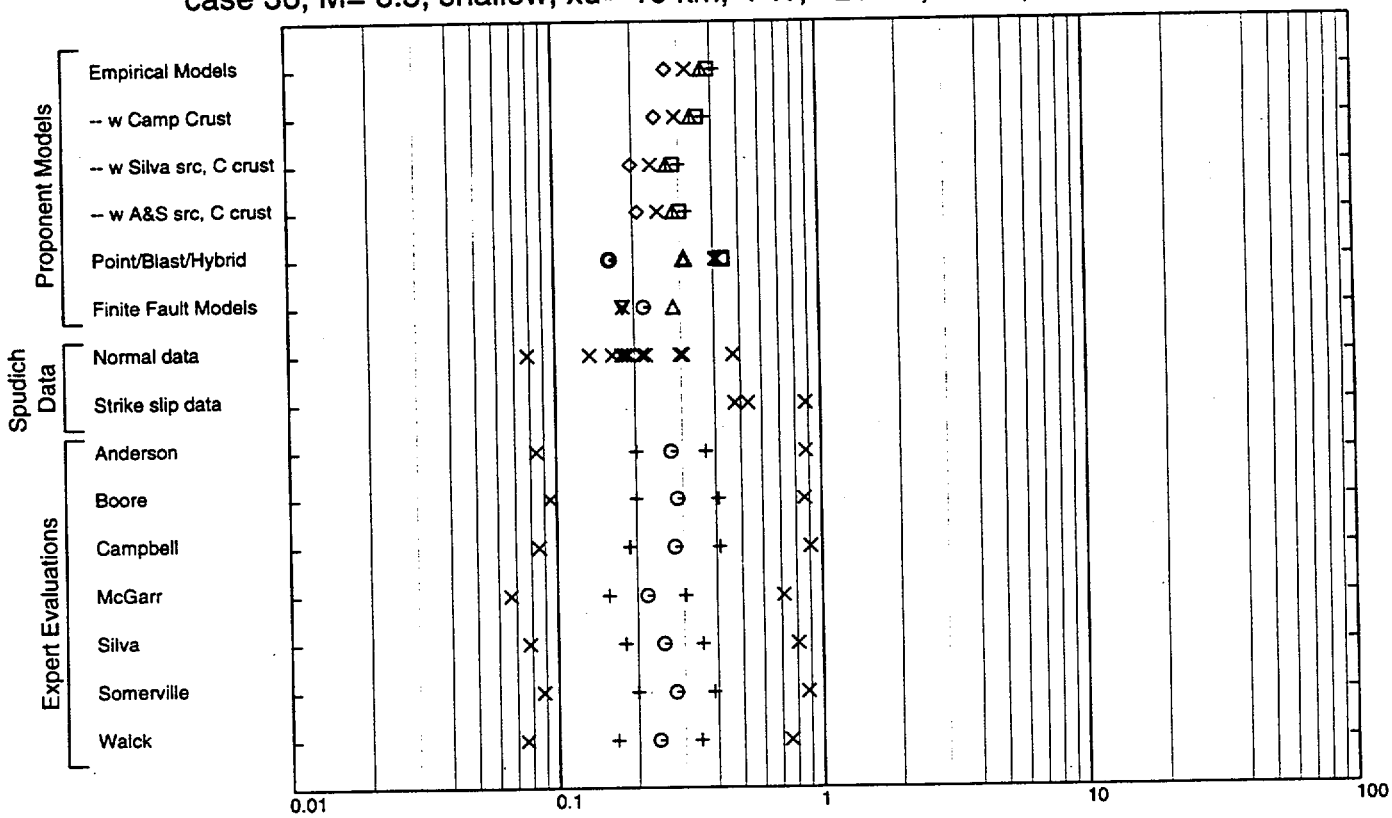
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

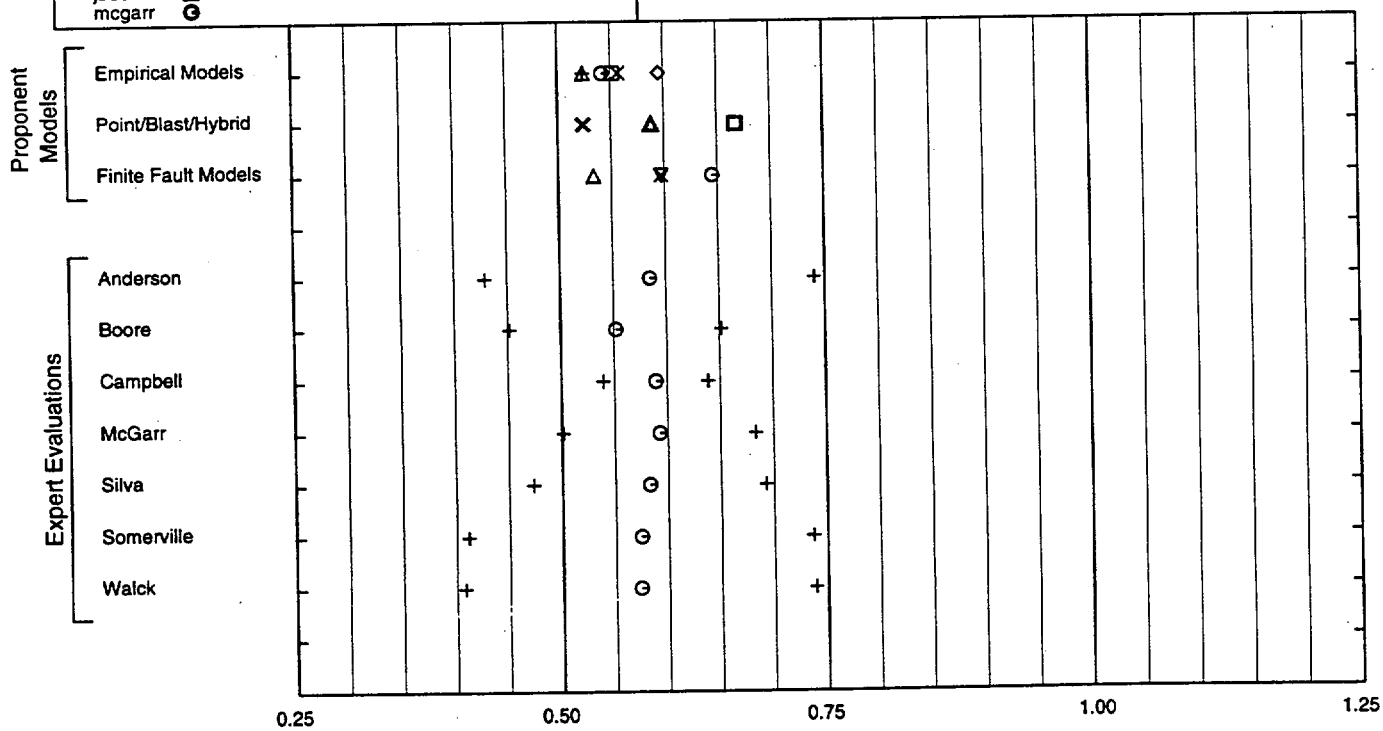
case 36, M= 6.5, shallow, xd=-10 km, FW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

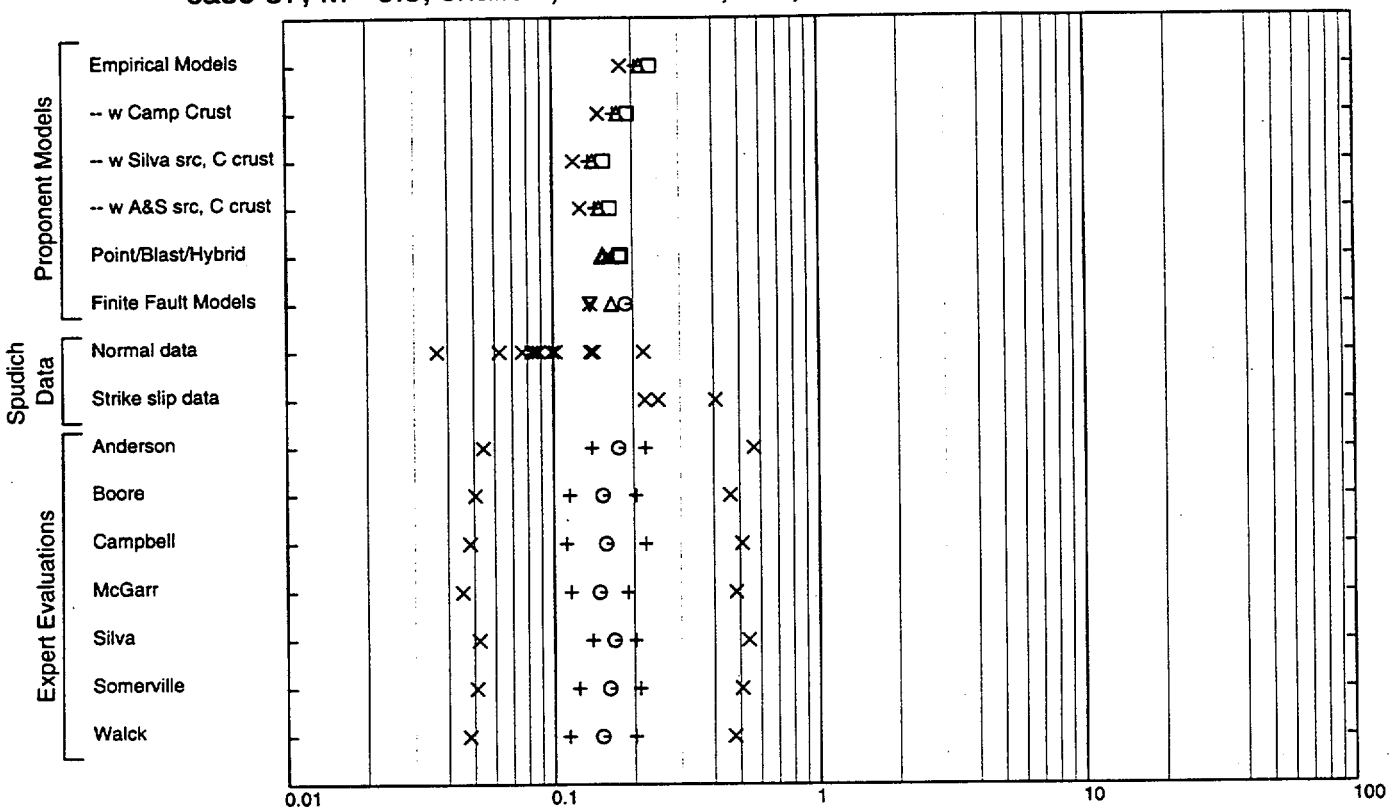
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

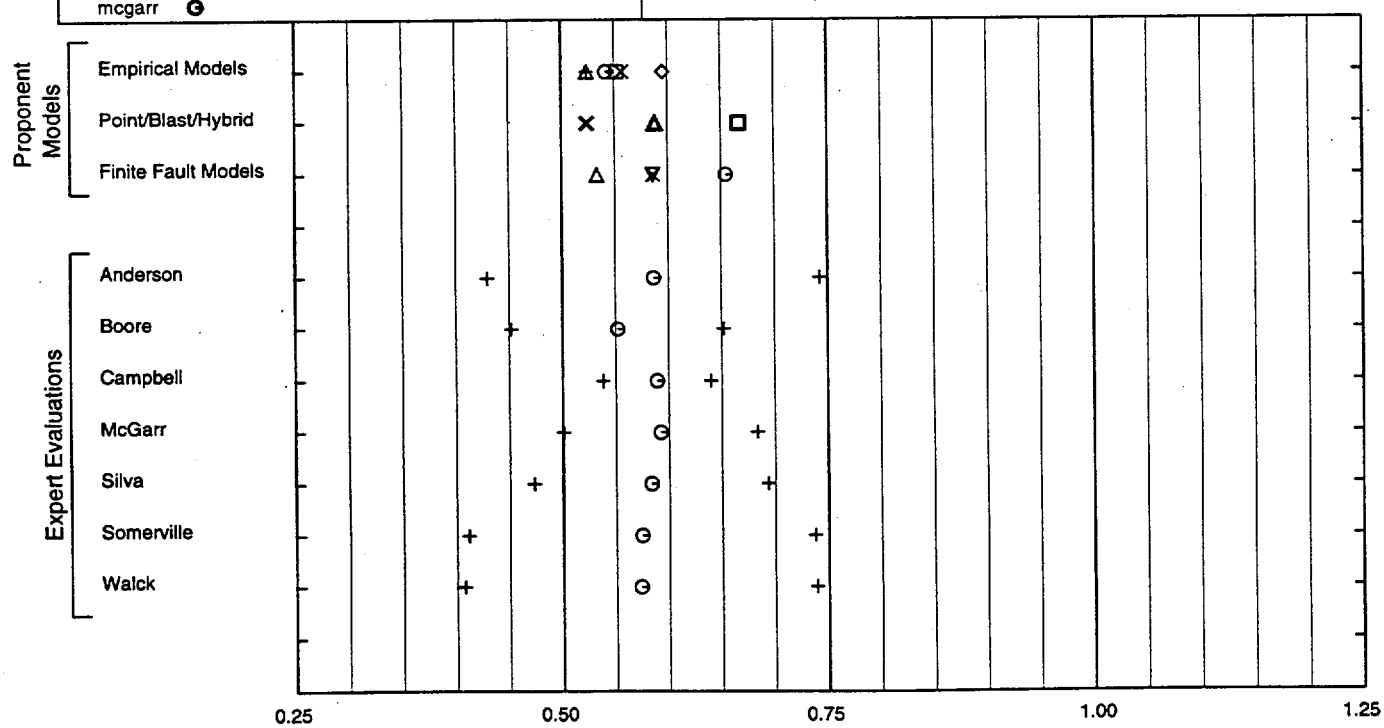
case 37, M= 6.5, shallow, xd= 20 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

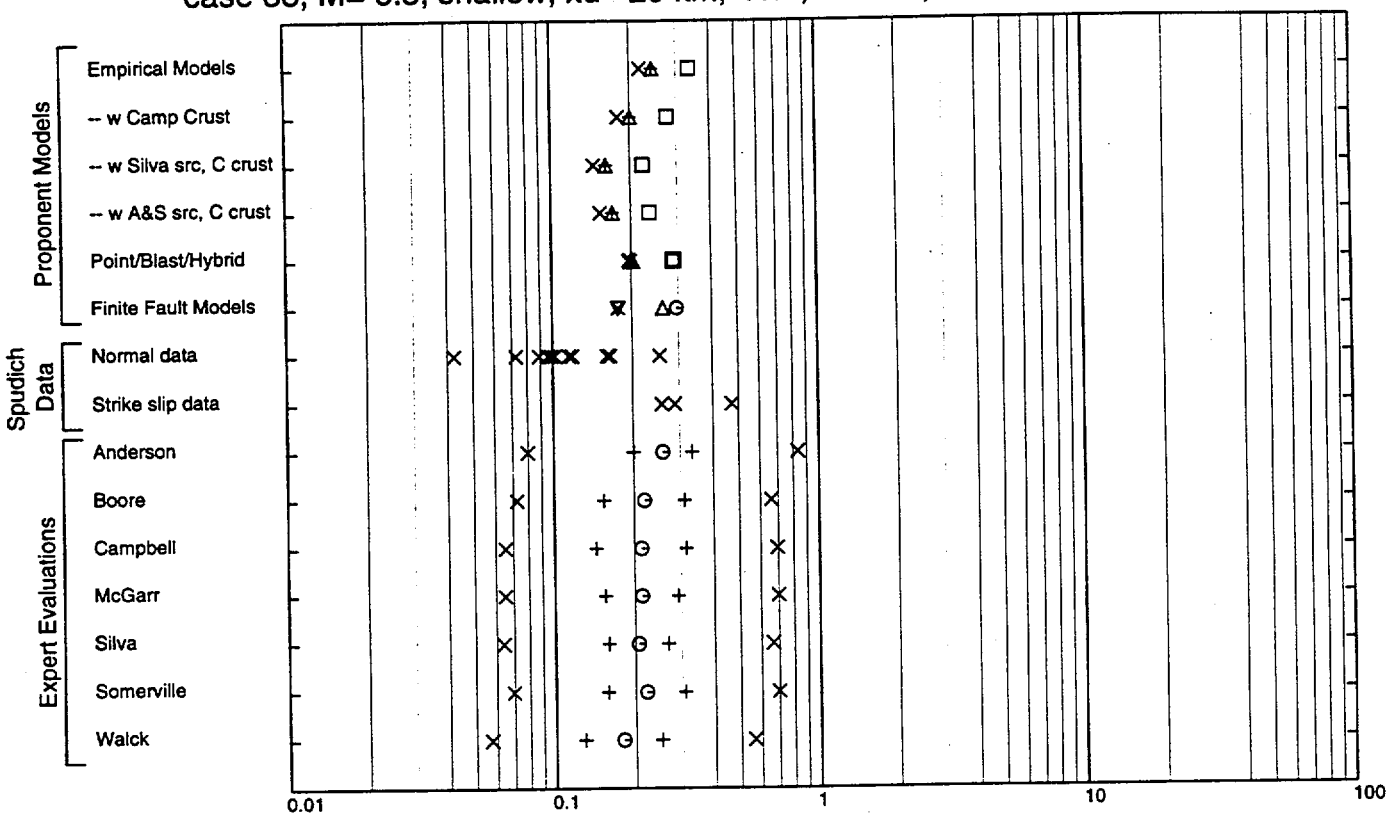
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

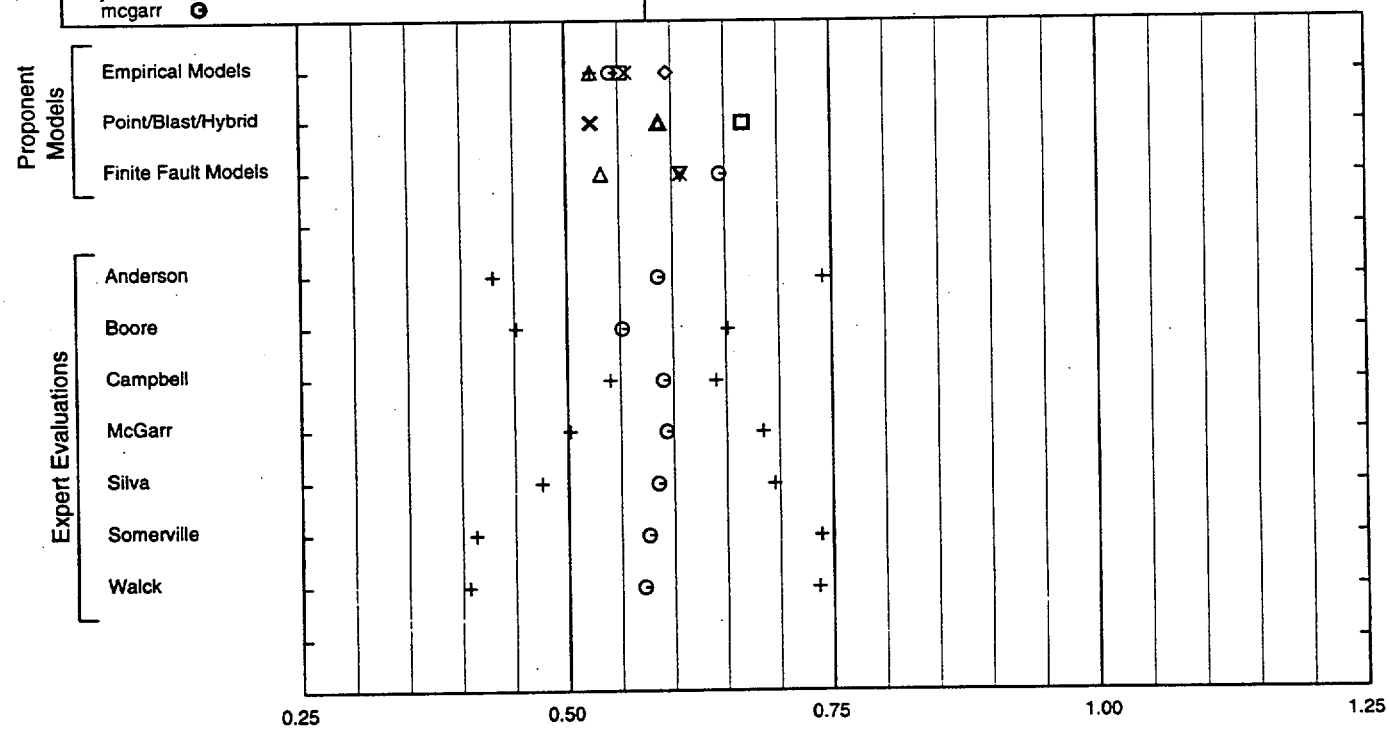
case 38, M= 6.5, shallow, xd= 20 km, HW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

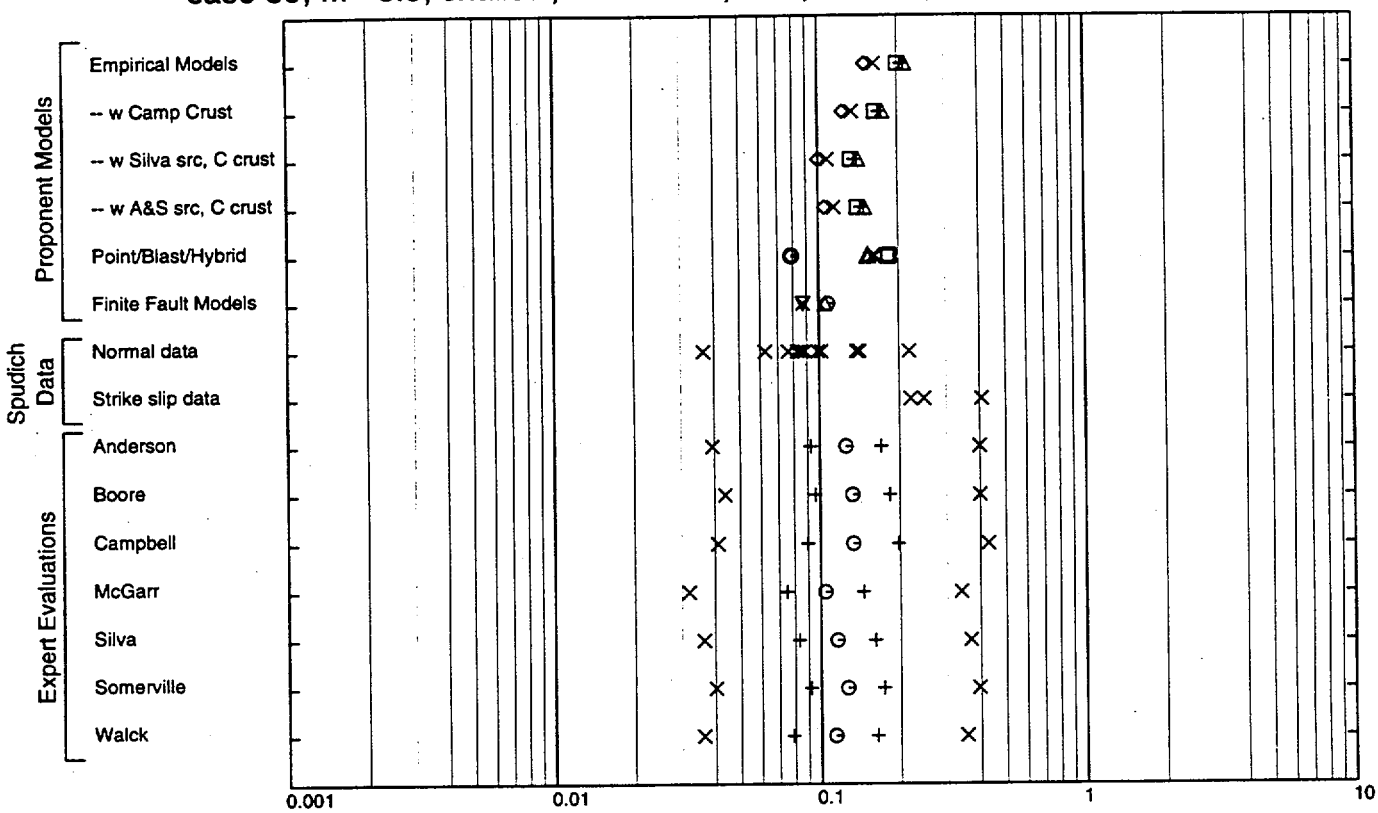
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

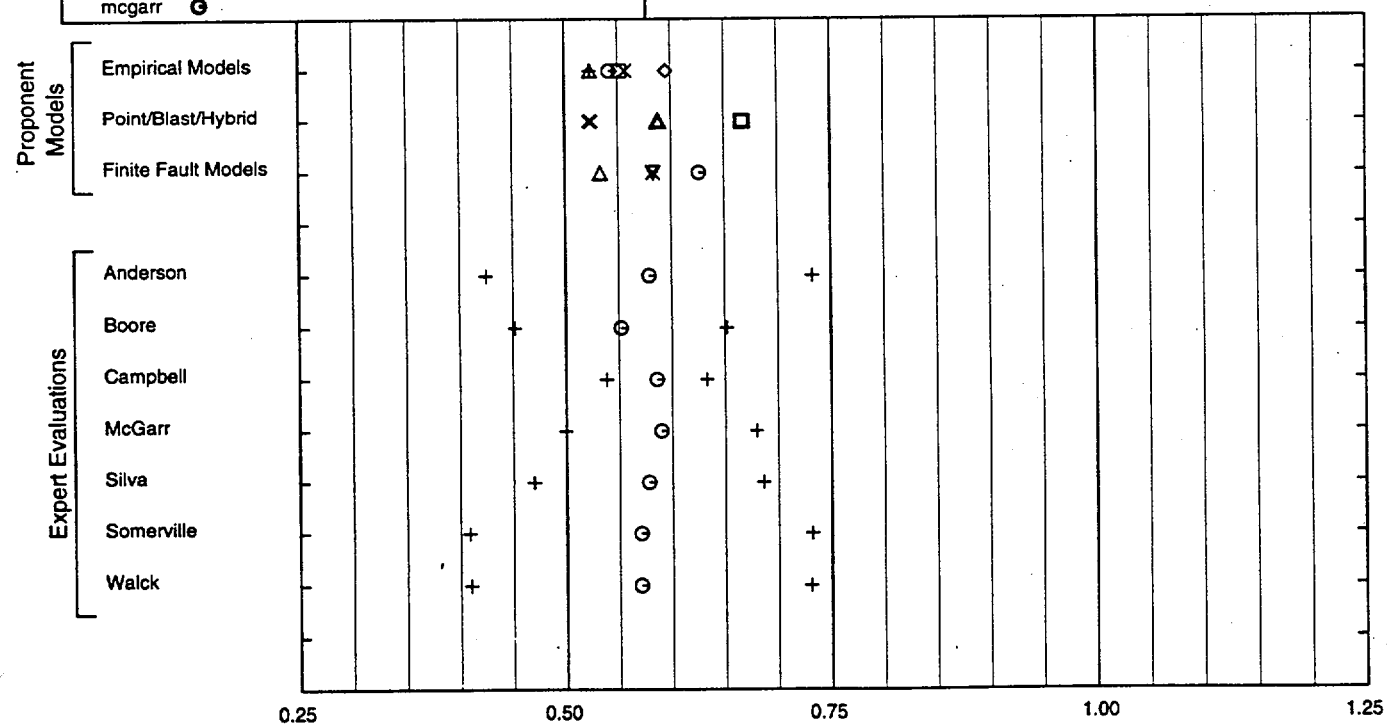
case 39, M= 6.5, shallow, xd=-20 km, FW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

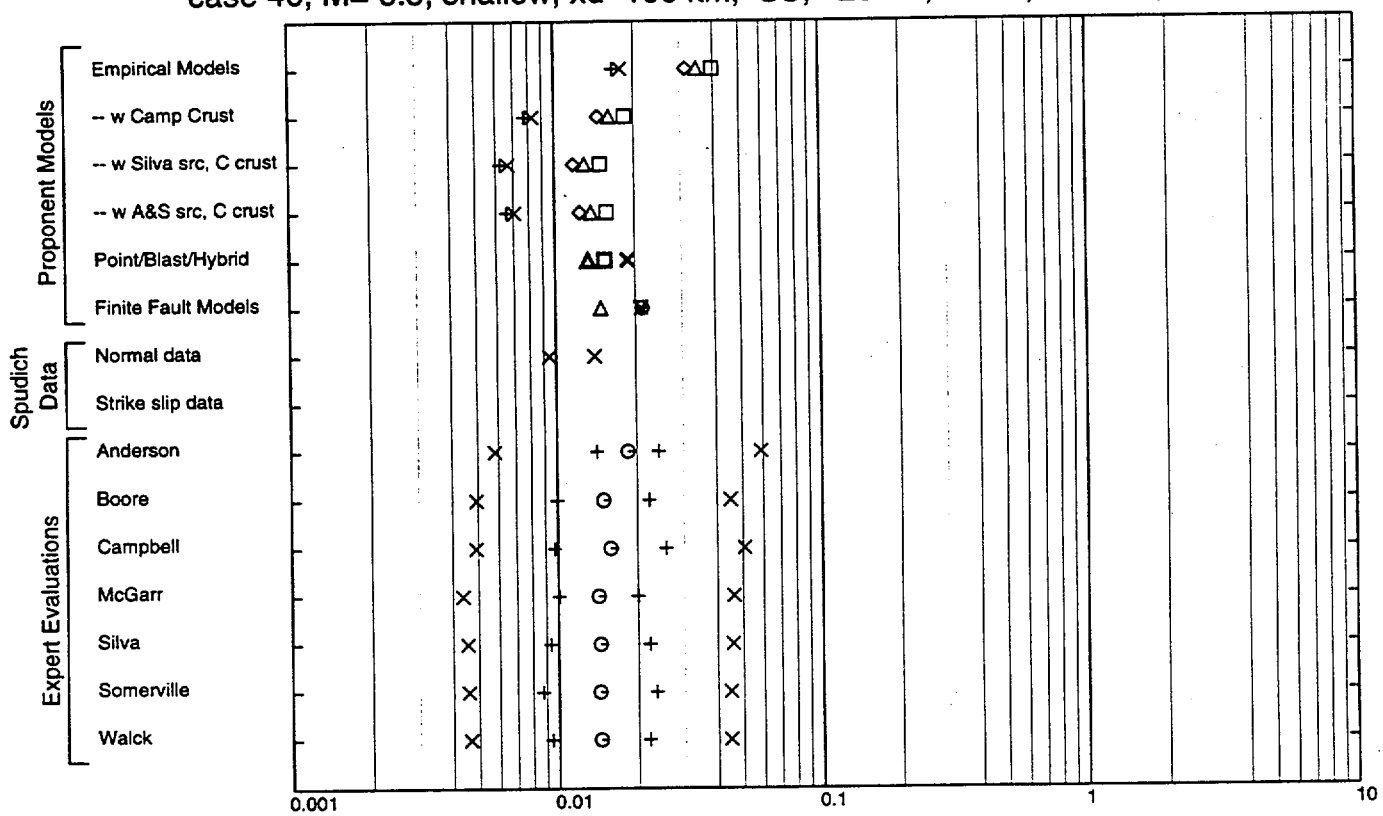
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊙	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊙				



Aleatory Sigma (LN units) w/ Comp Var.

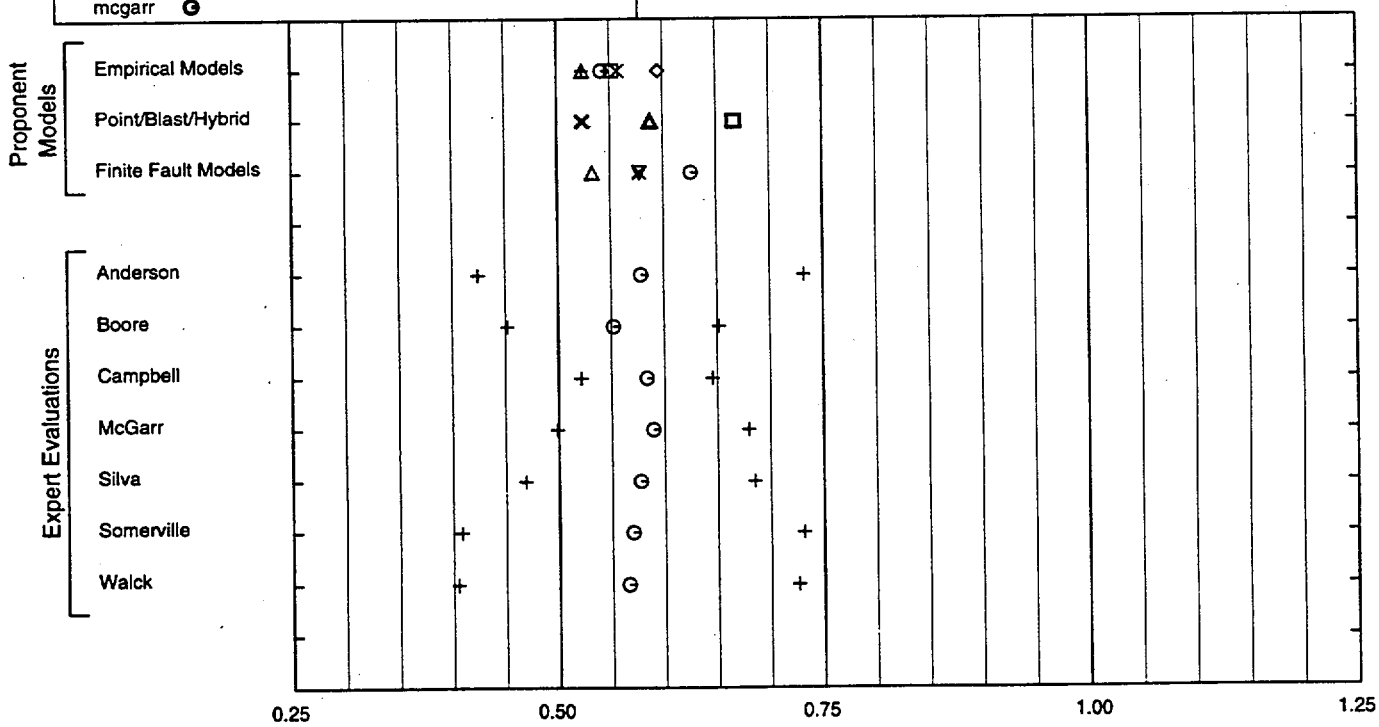
case 40, M= 6.5, shallow, xd=100 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

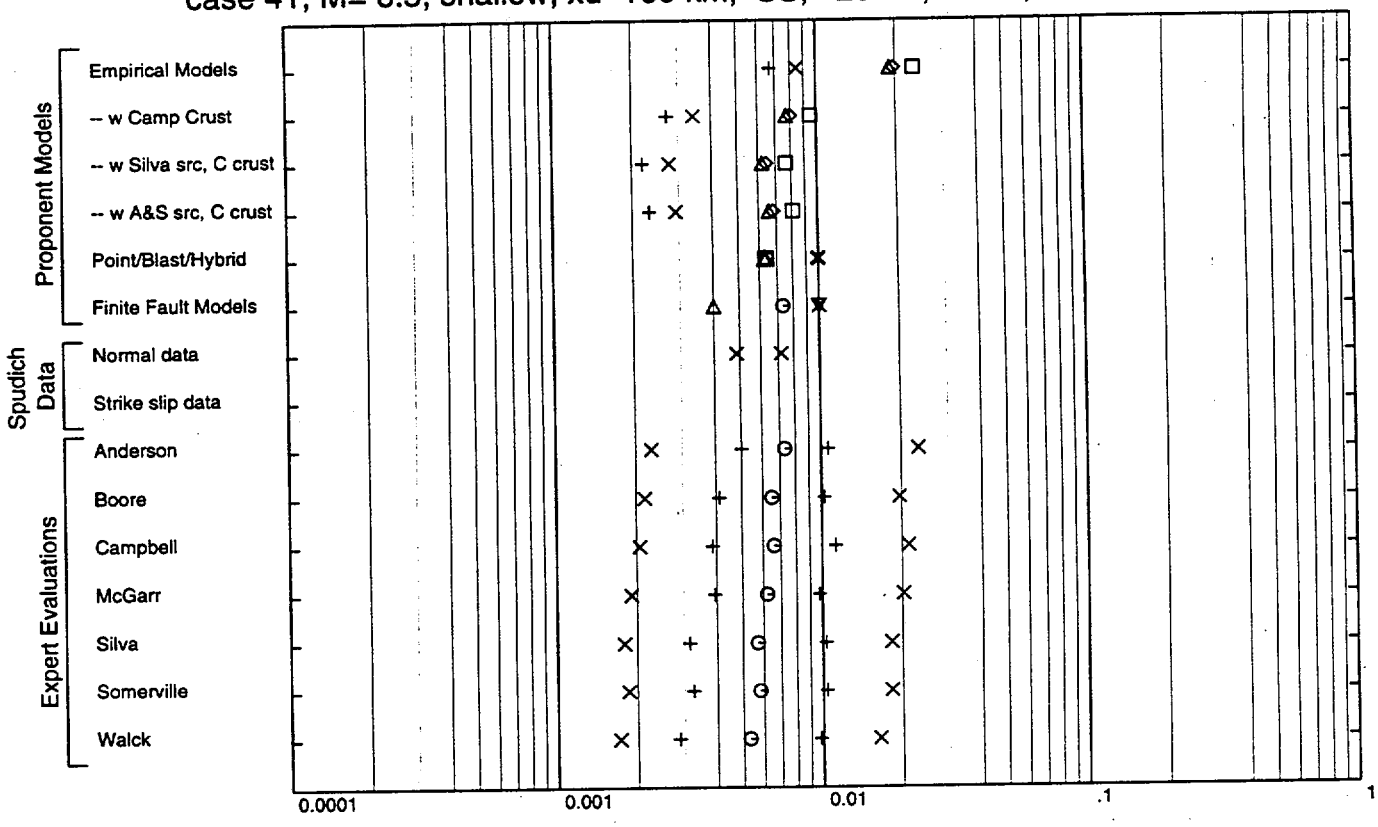
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

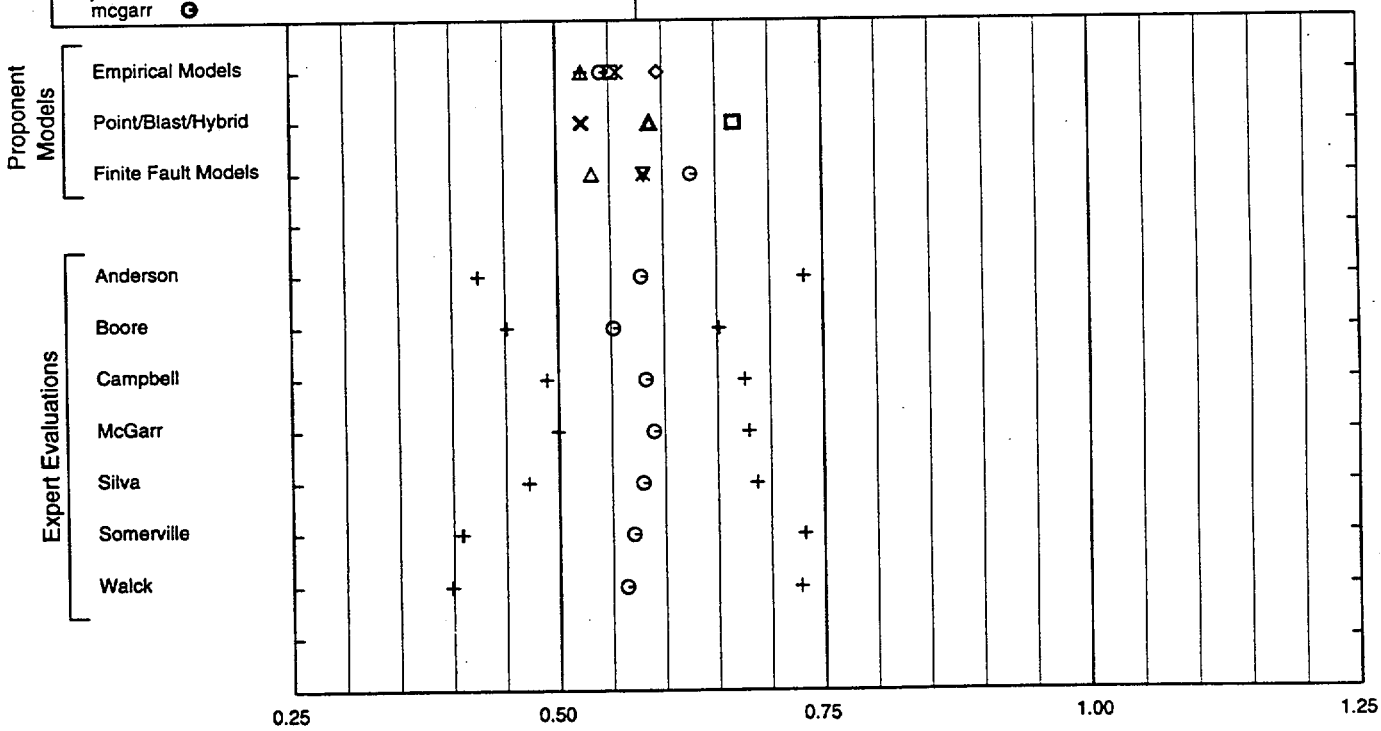
case 41, M= 6.5, shallow, xd=160 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

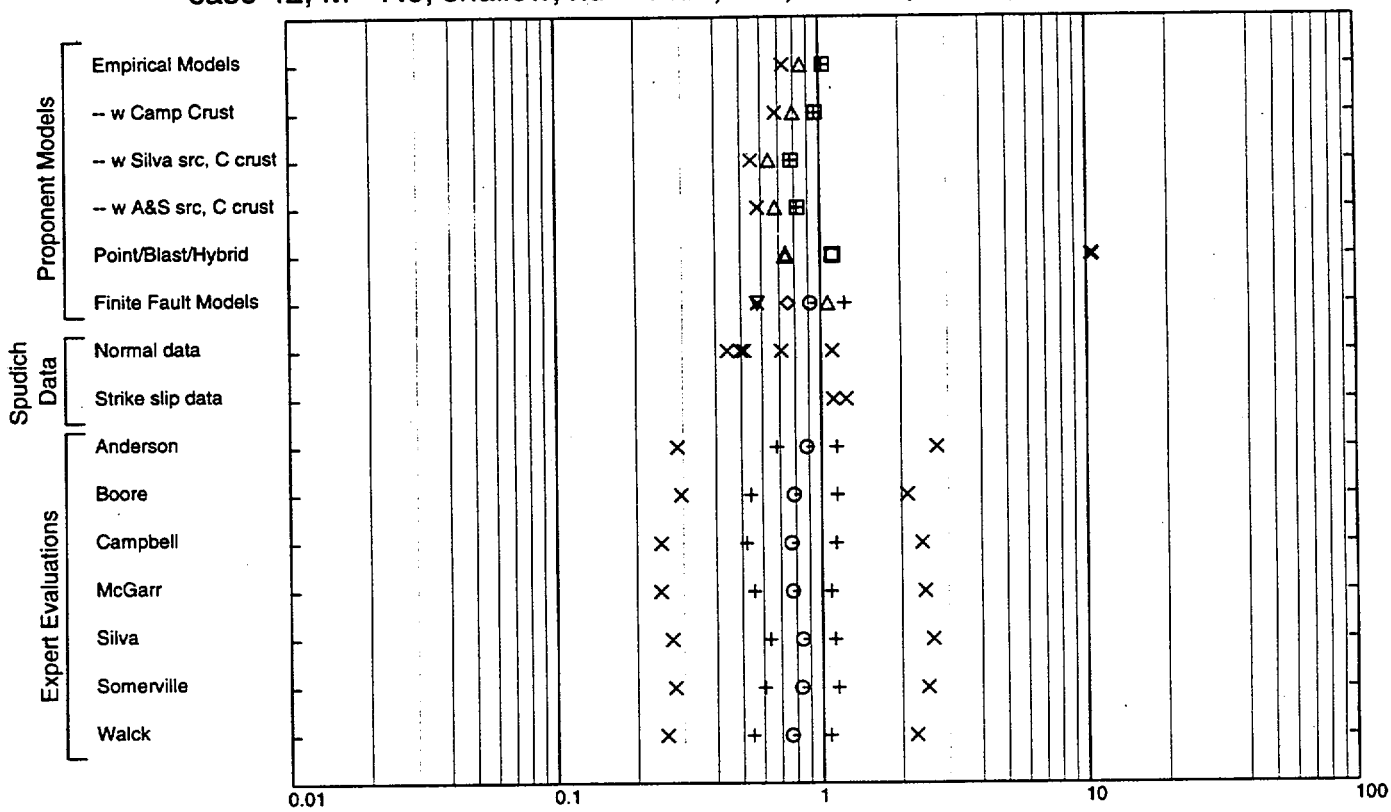
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

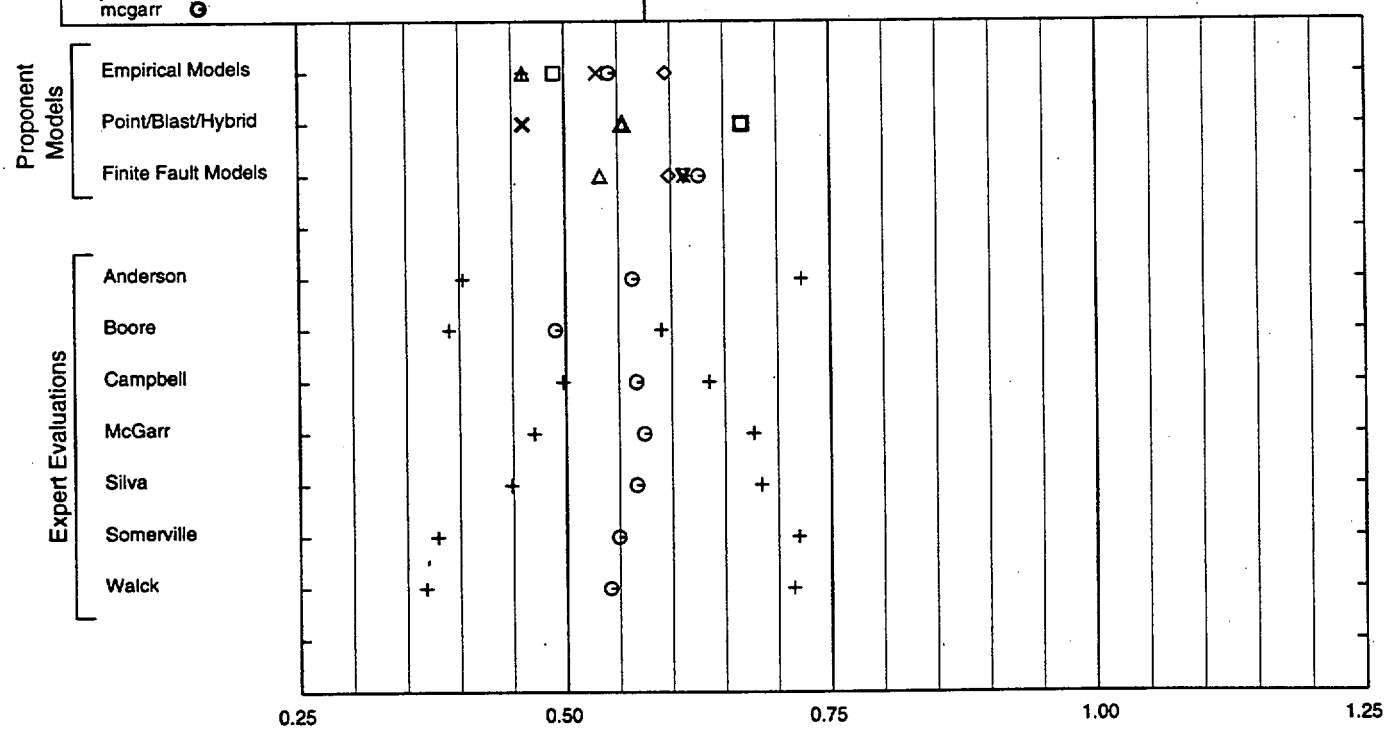
case 42, M= 7.0, shallow, xd= 1 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

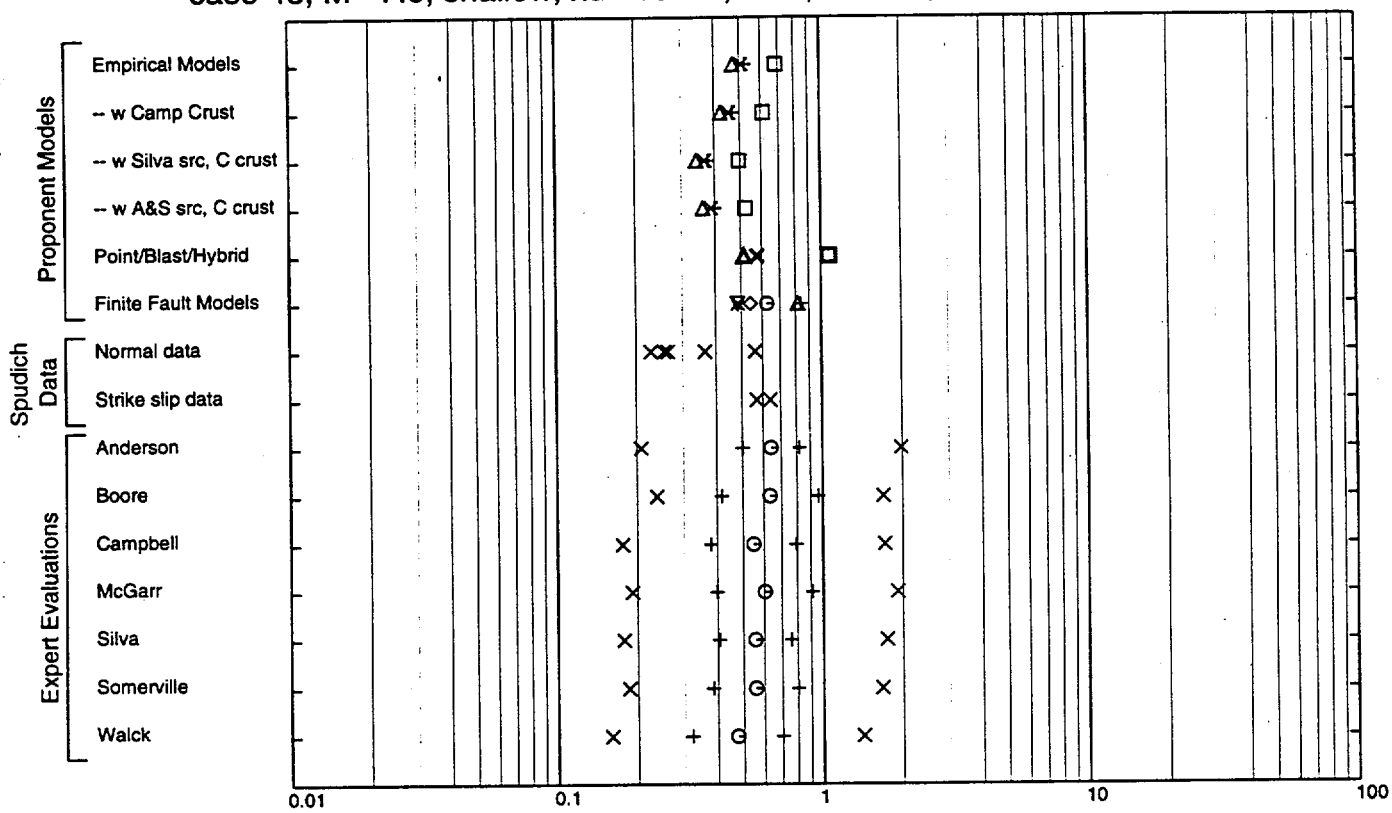
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

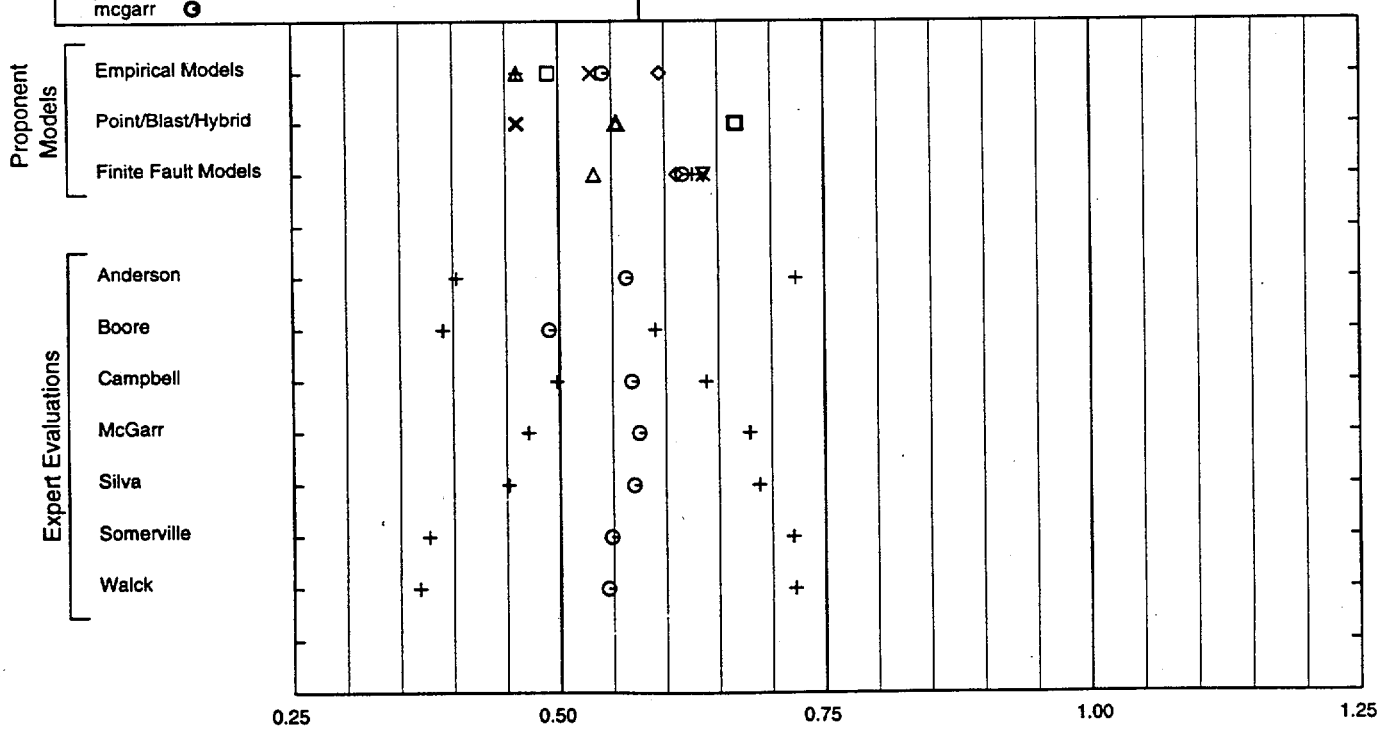
case 43, M= 7.0, shallow, xd= 10 km, HW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

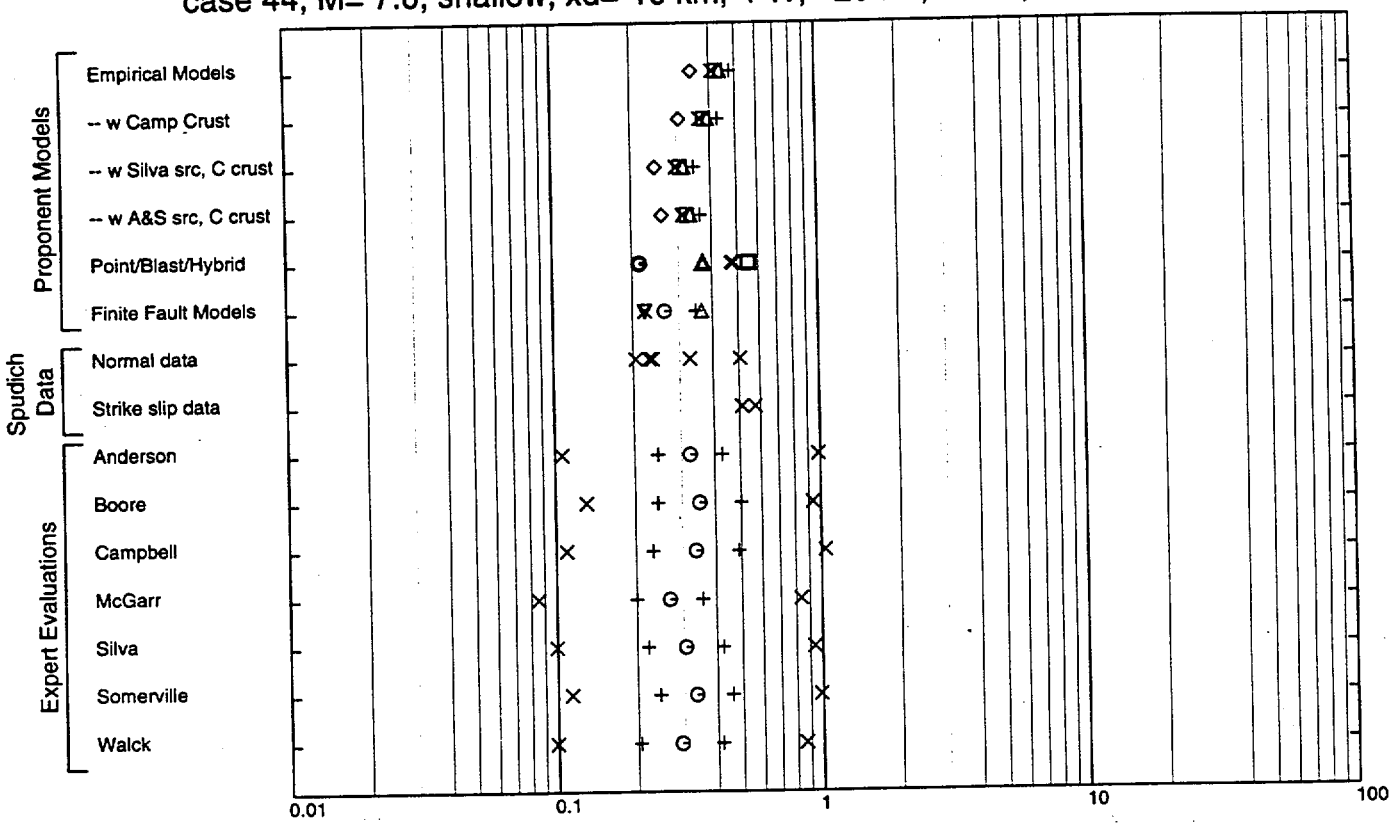
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



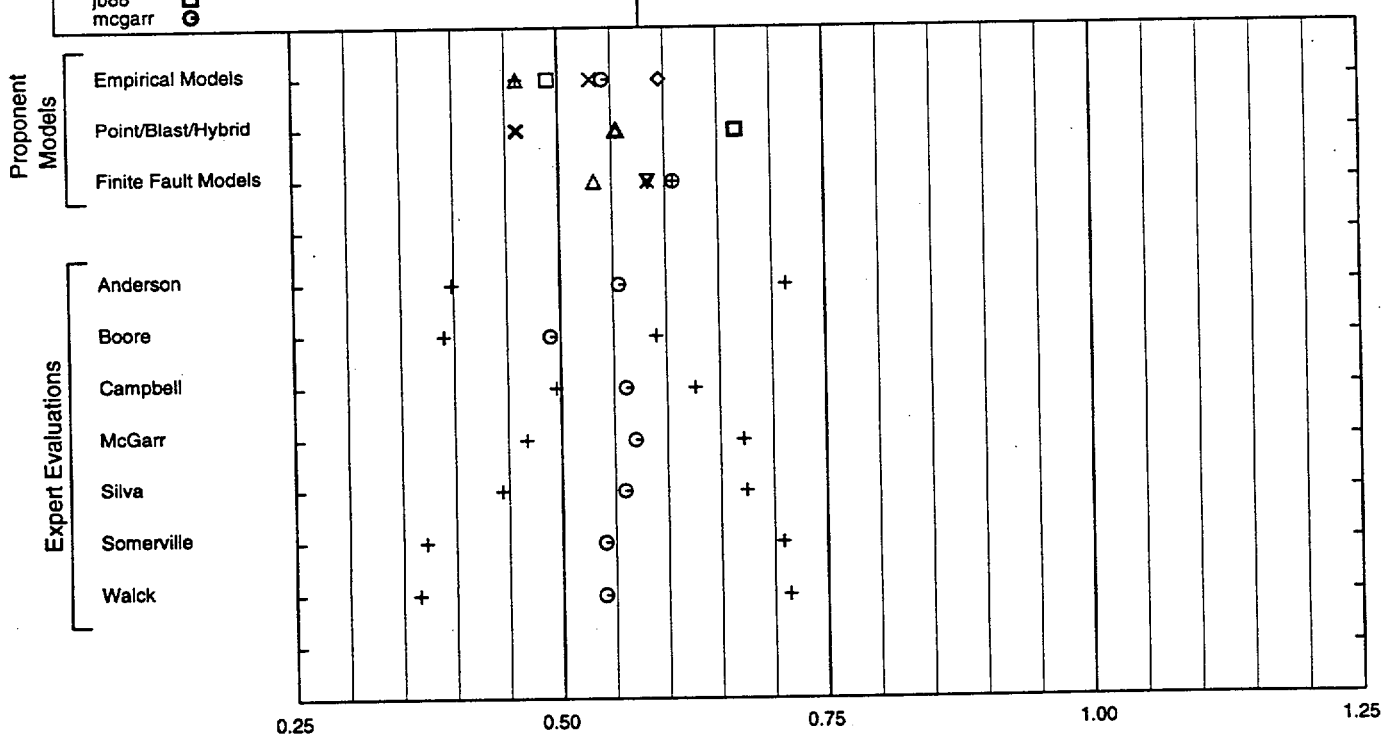
Aleatory Sigma (LN units) w/ Comp Var.

case 44, M= 7.0, shallow, xd=-10 km, FW, 20 Hz, HOR, 6/5/97, Rev 1

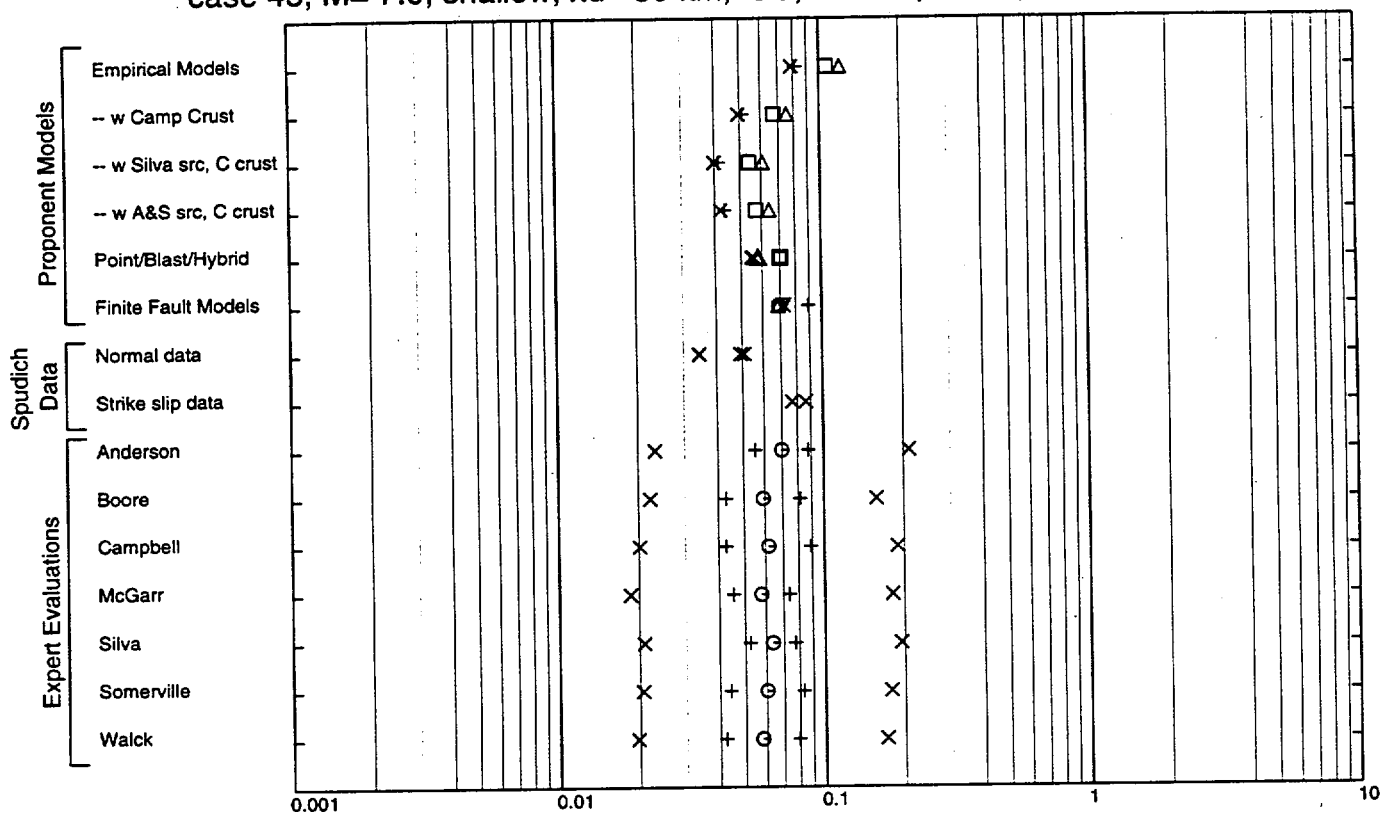


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



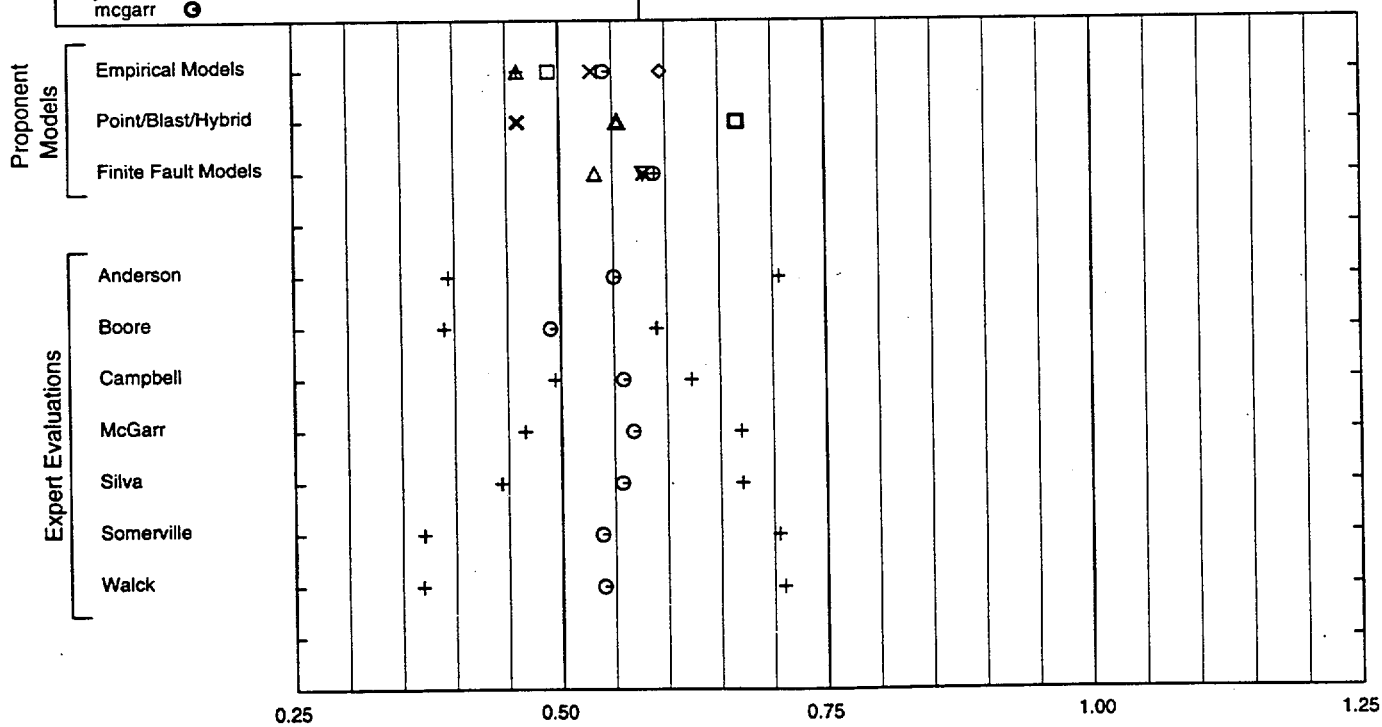
case 45, M= 7.0, shallow, xd= 50 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

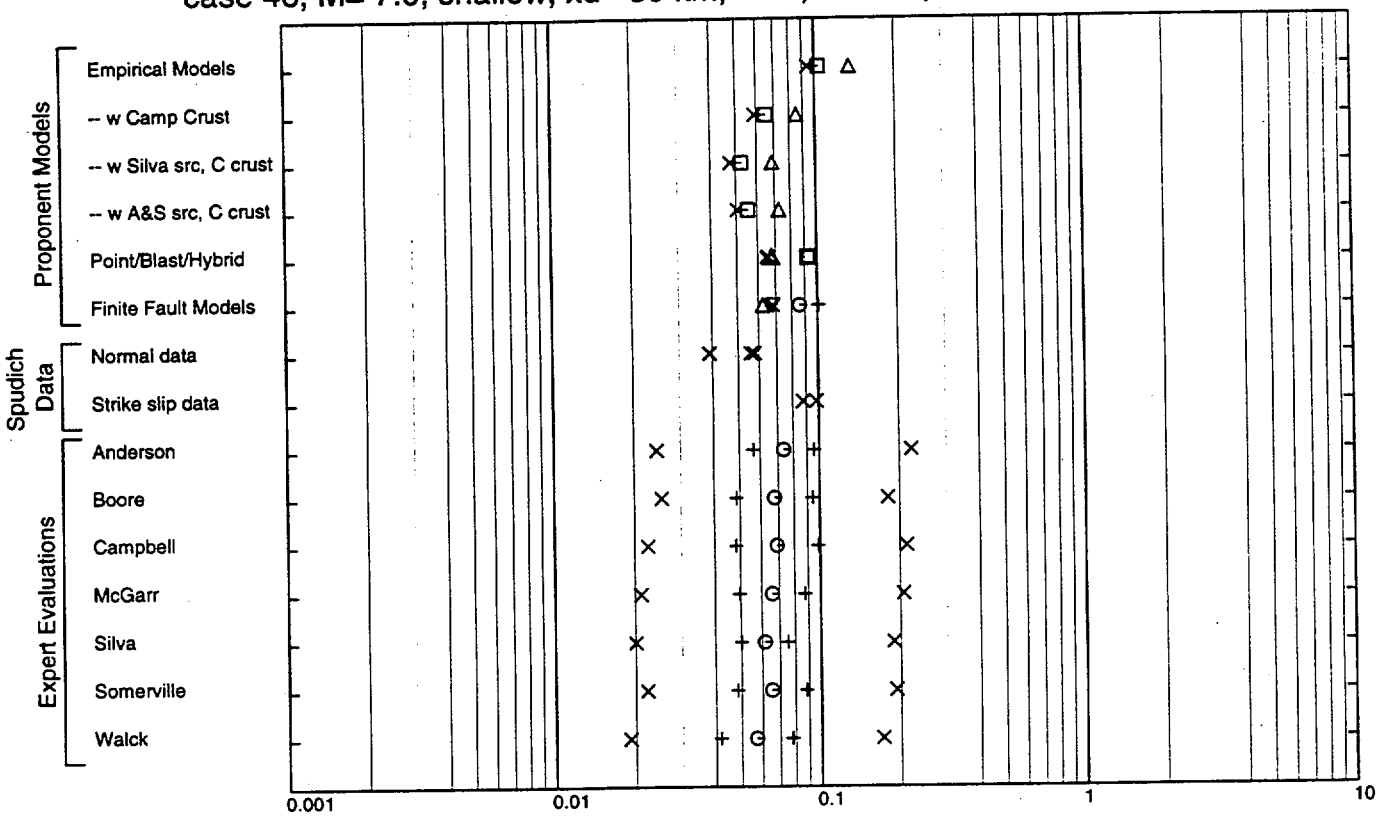
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

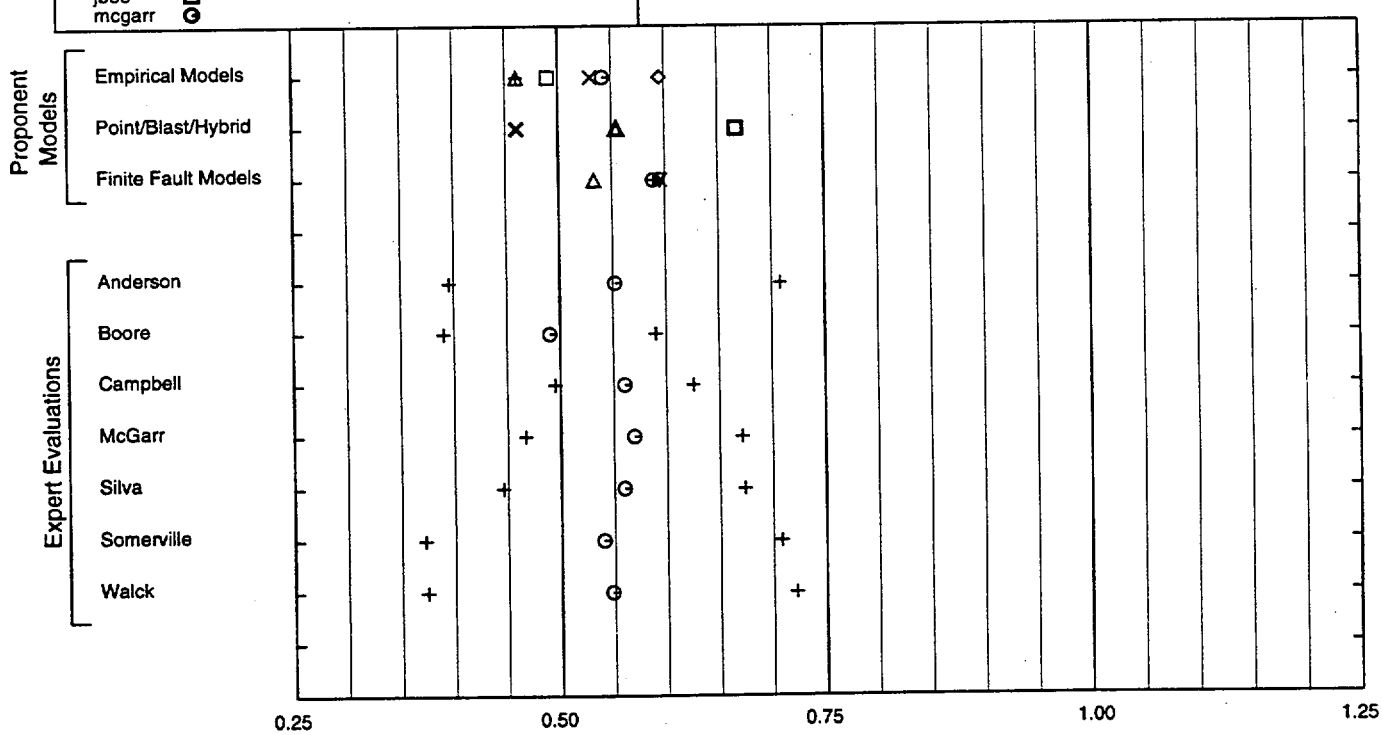
case 46, M= 7.0, shallow, xd= 50 km, HW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

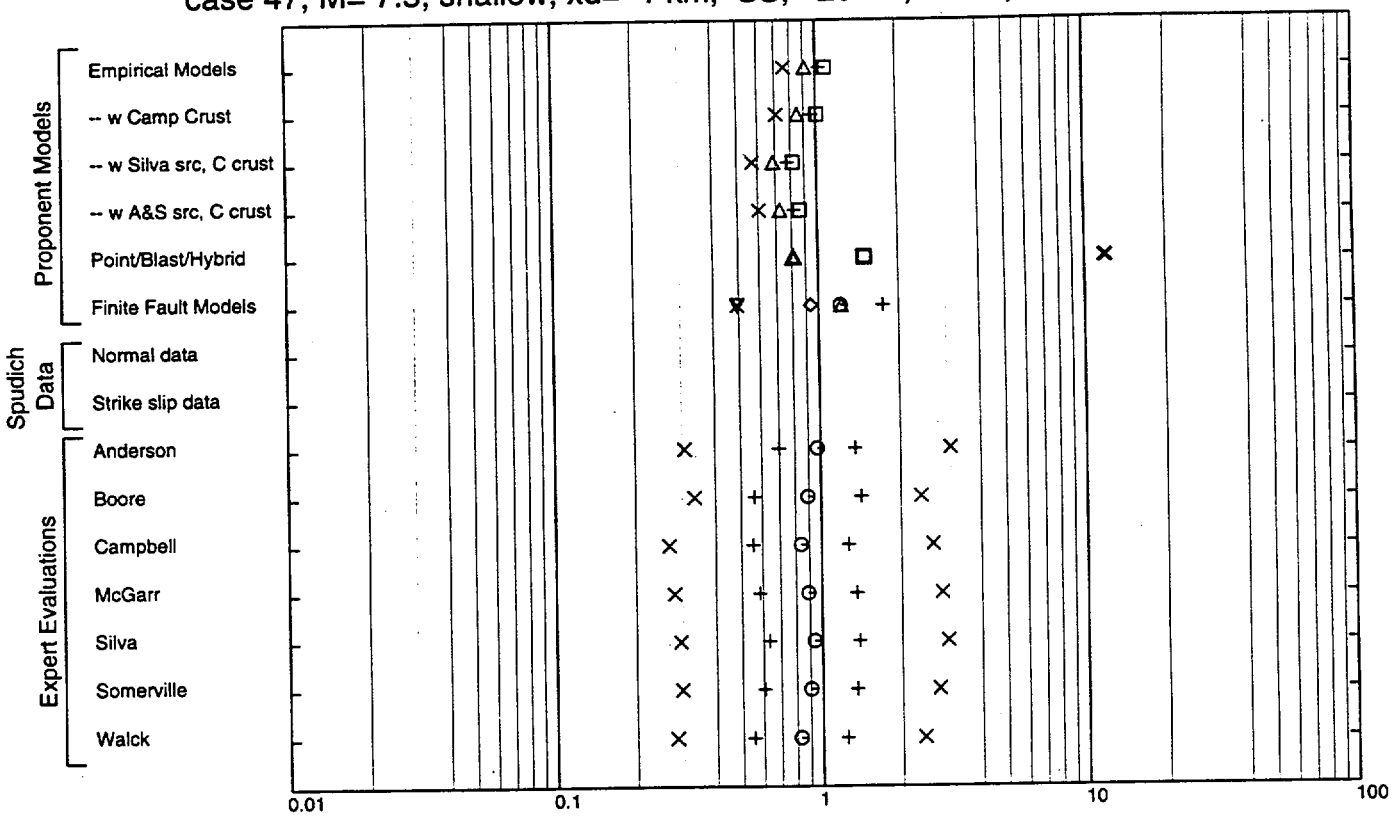
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

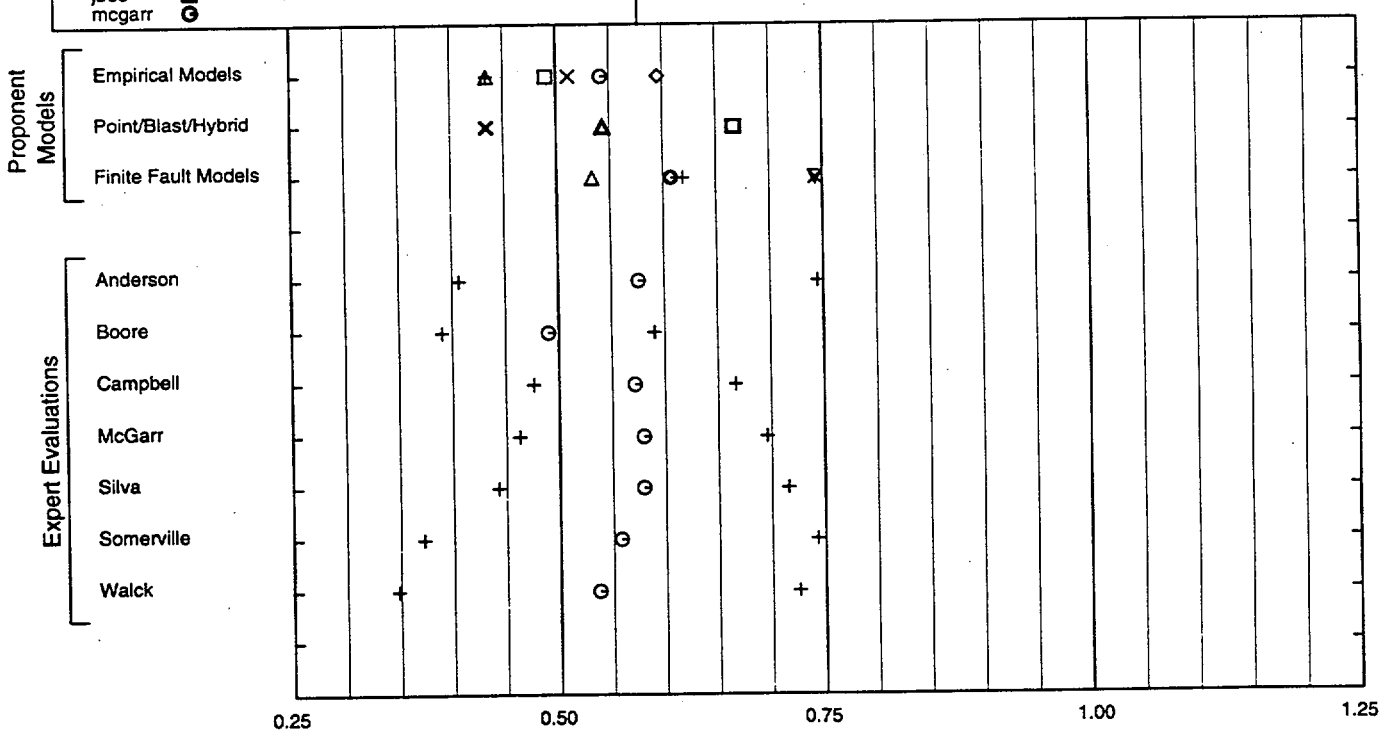
case 47, M= 7.5, shallow, xd= 1 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

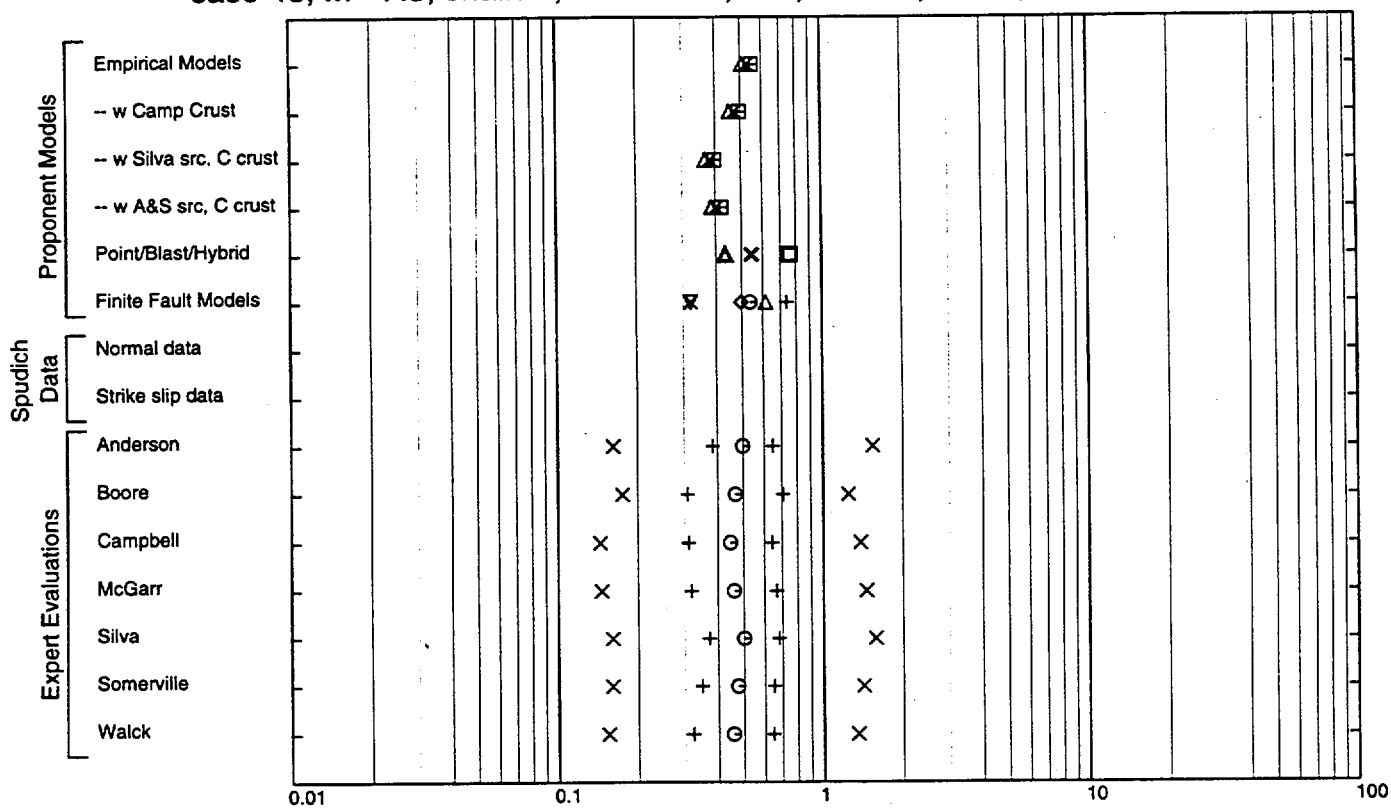
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

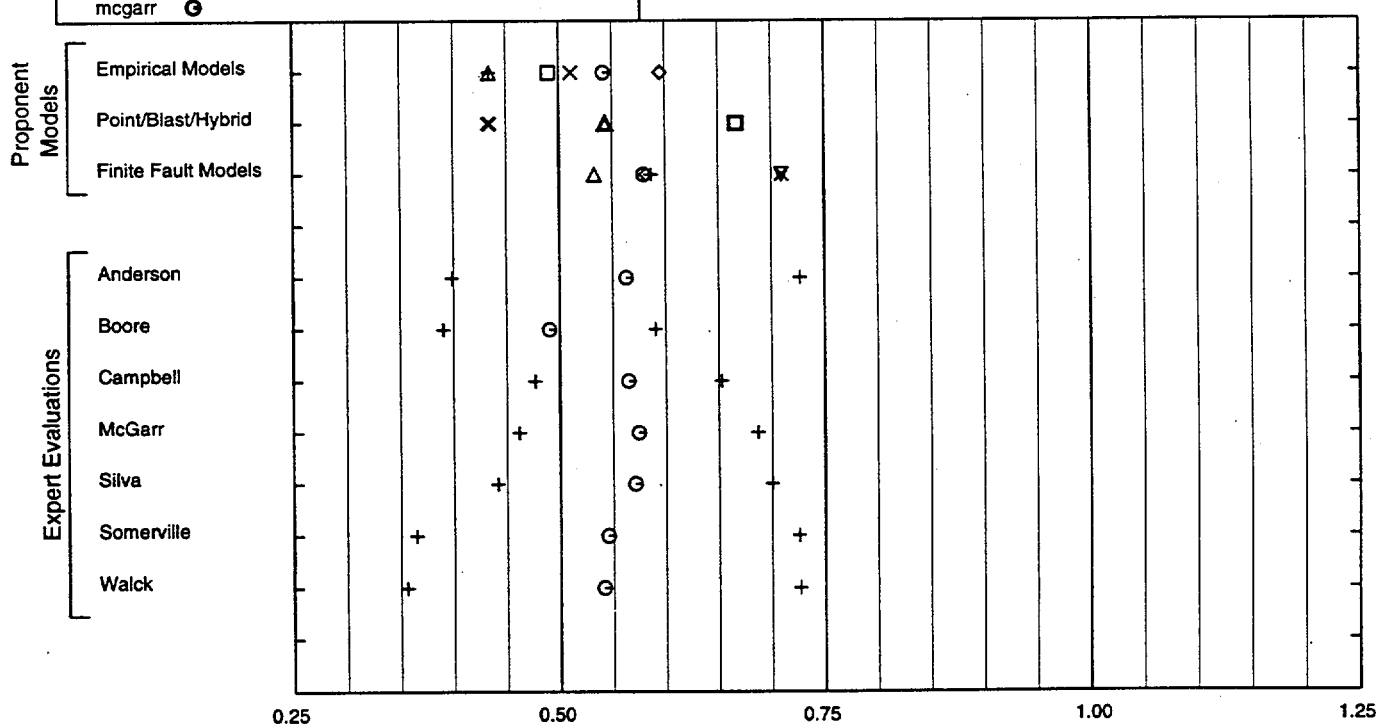
case 48, M= 7.5, shallow, xd= 10 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

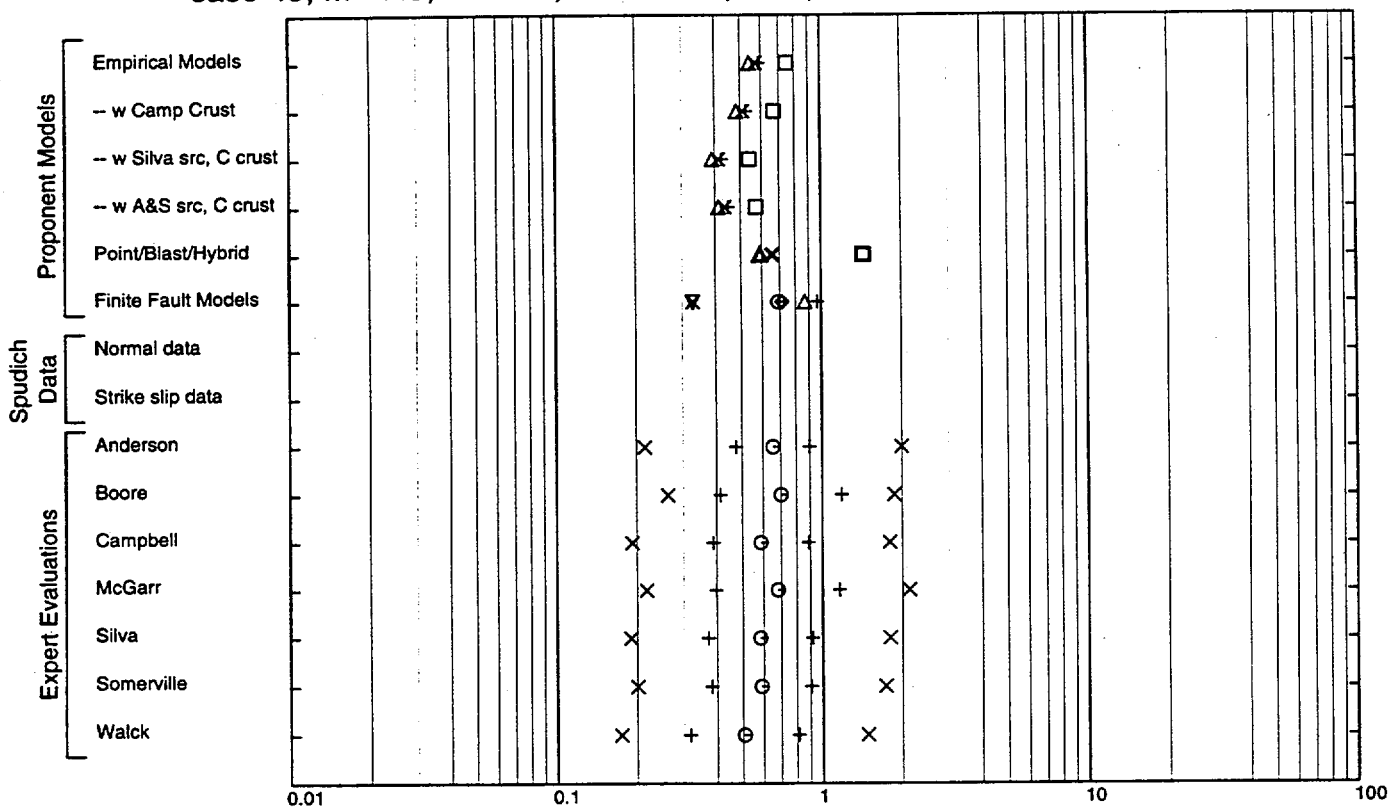
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

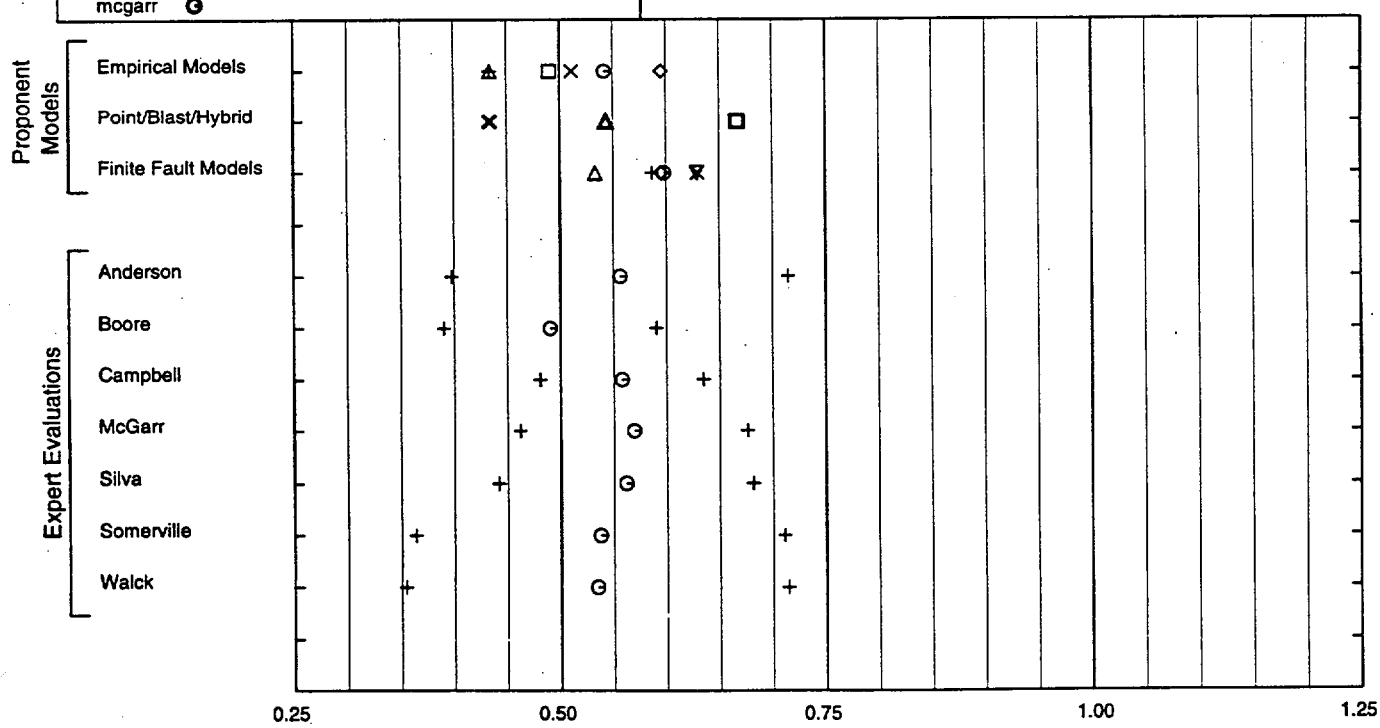
case 49, M= 7.5, shallow, xd= 10 km, HW, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

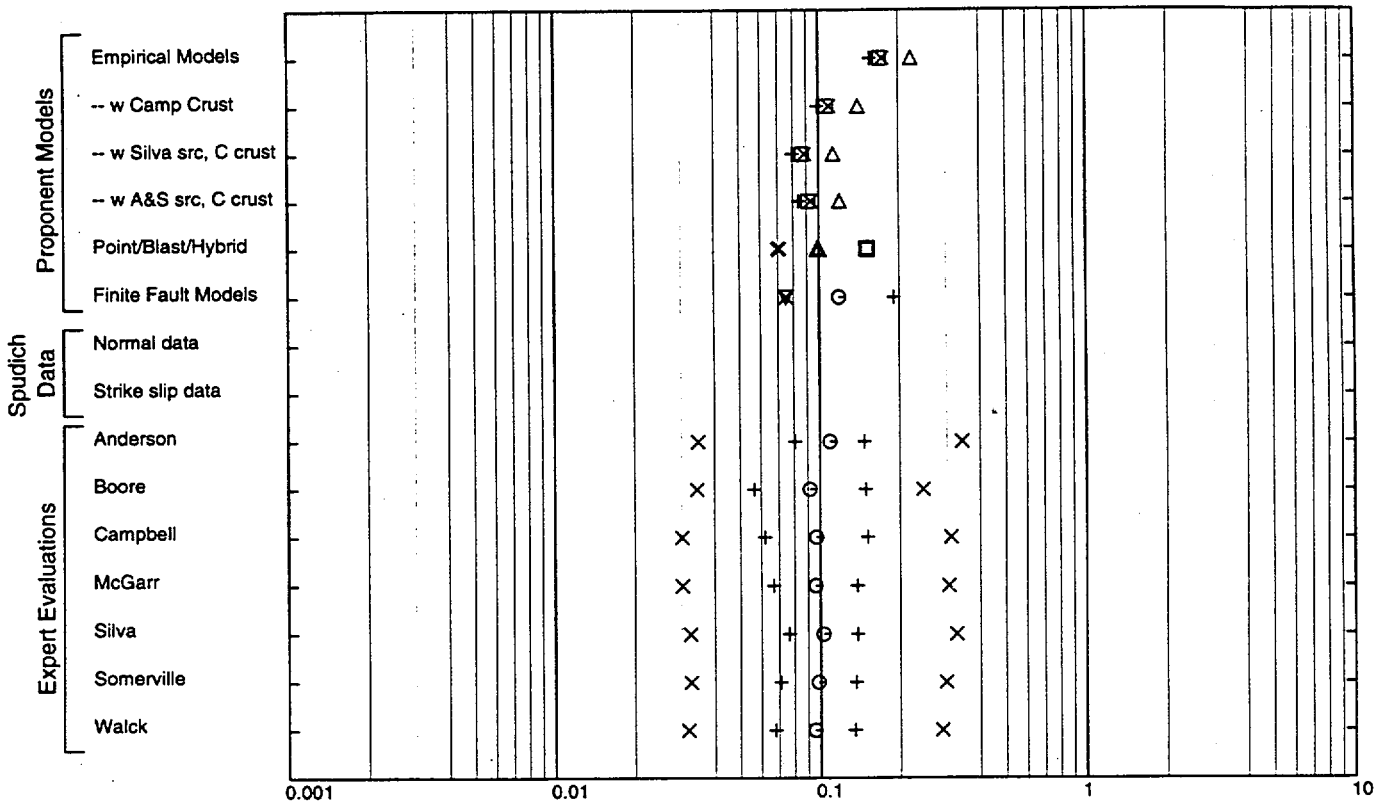
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

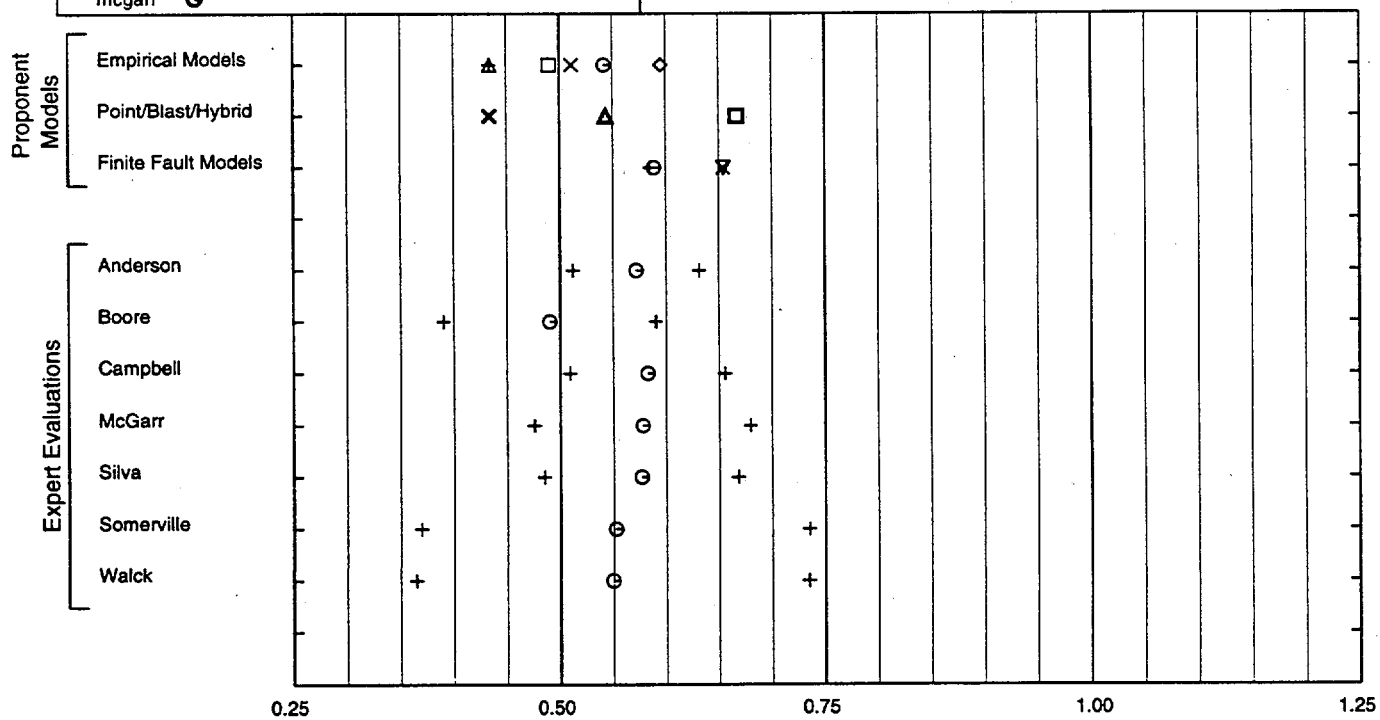
case 50, M= 8.0, shallow, xd= 50 km, SS, 20 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

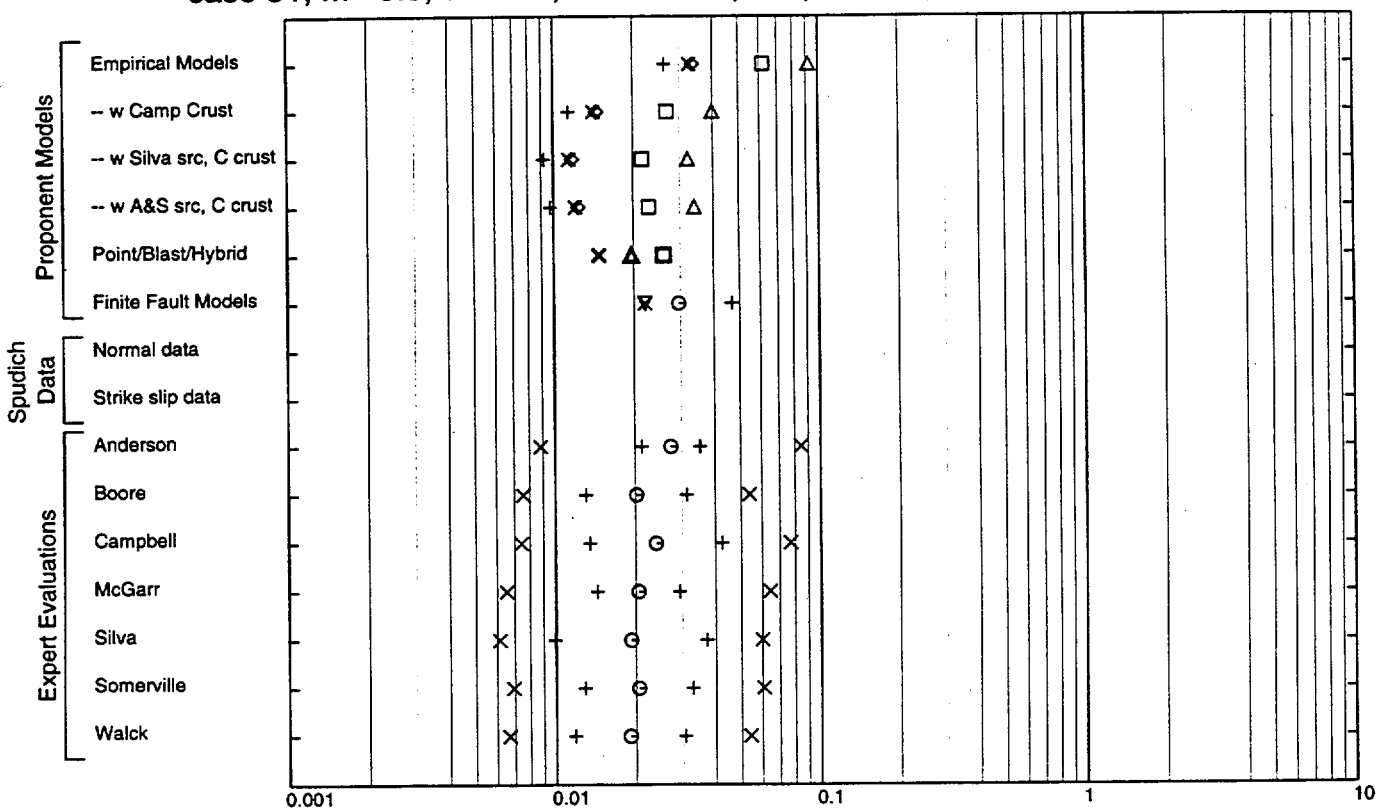
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



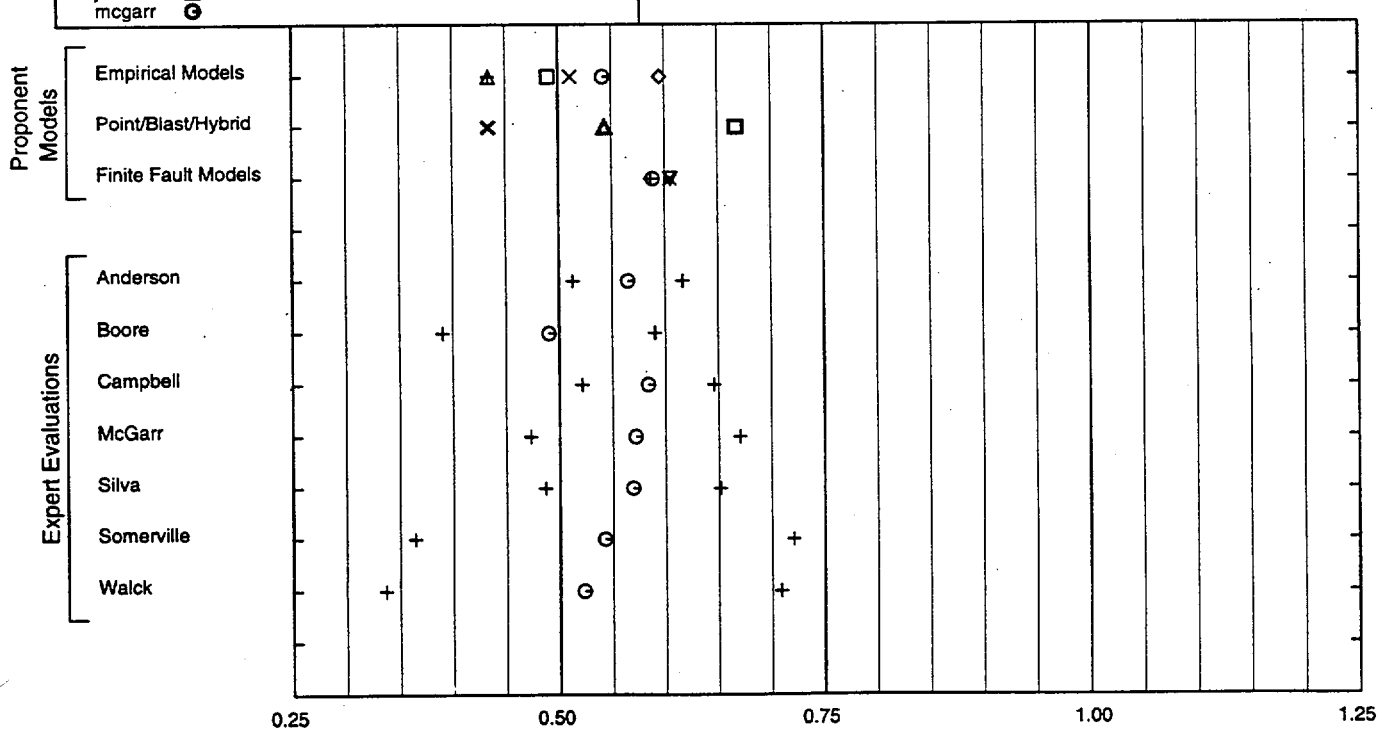
Aleatory Sigma (LN units) w/ Comp Var.

case 51, M= 8.0, shallow, xd=160 km, SS, 20 Hz, HOR, 6/5/97, Rev 1

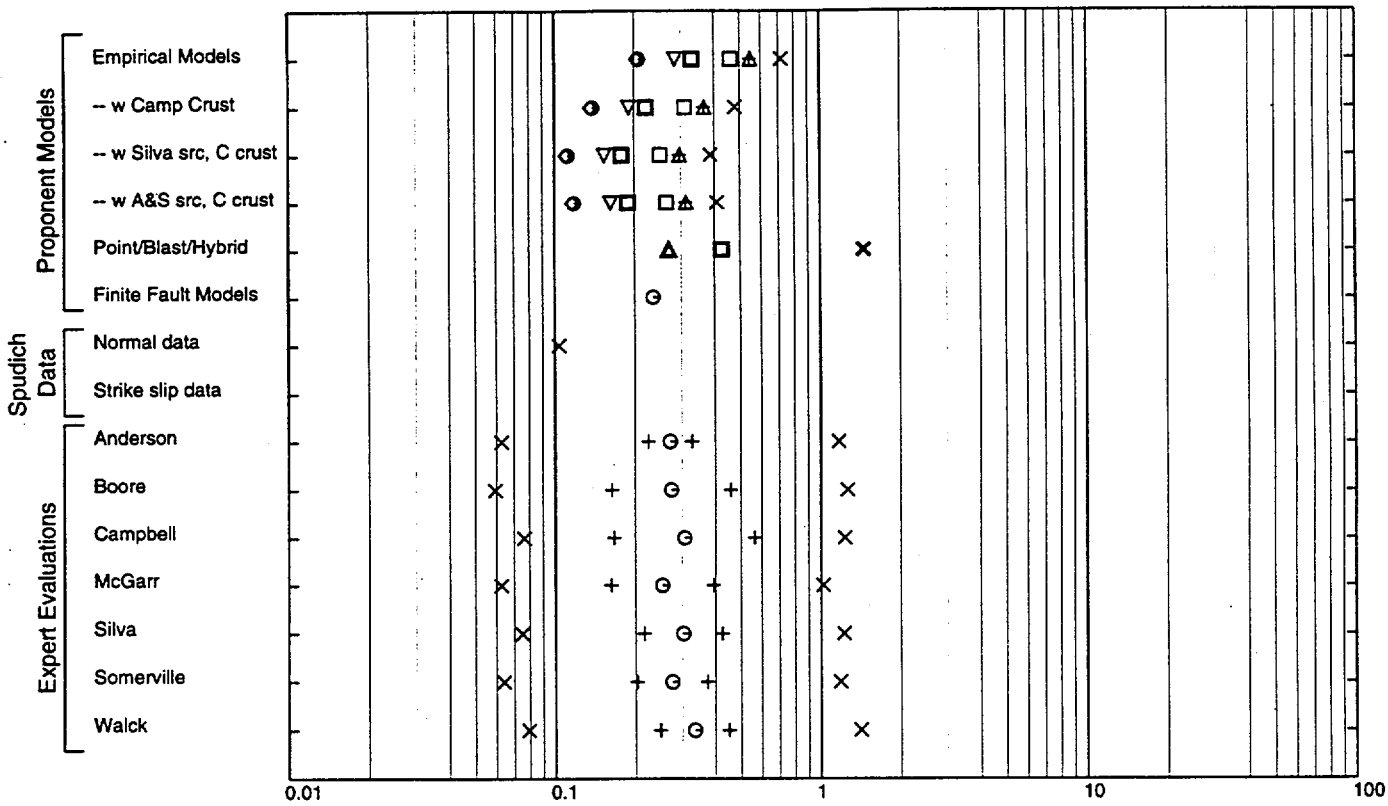


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



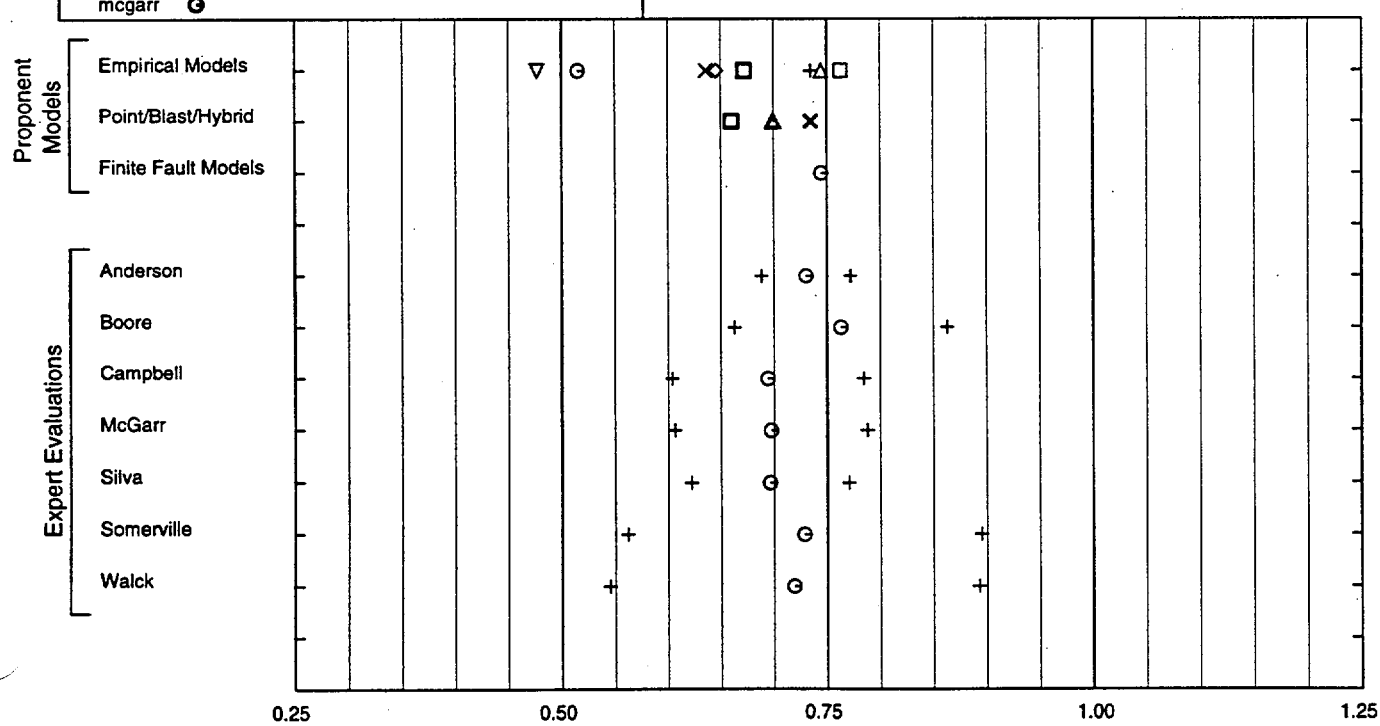
case 1, M= 5.0, shallow, xd= 1 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

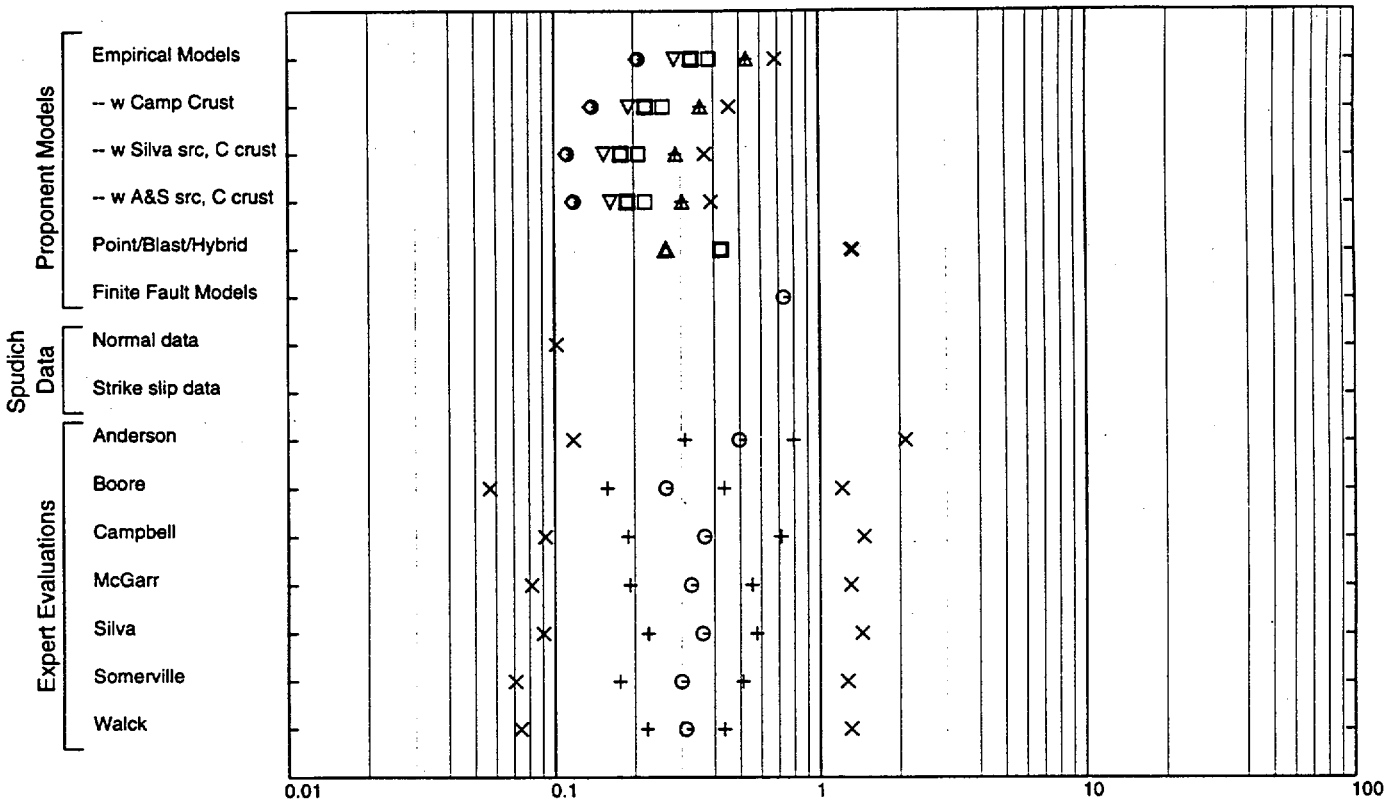
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

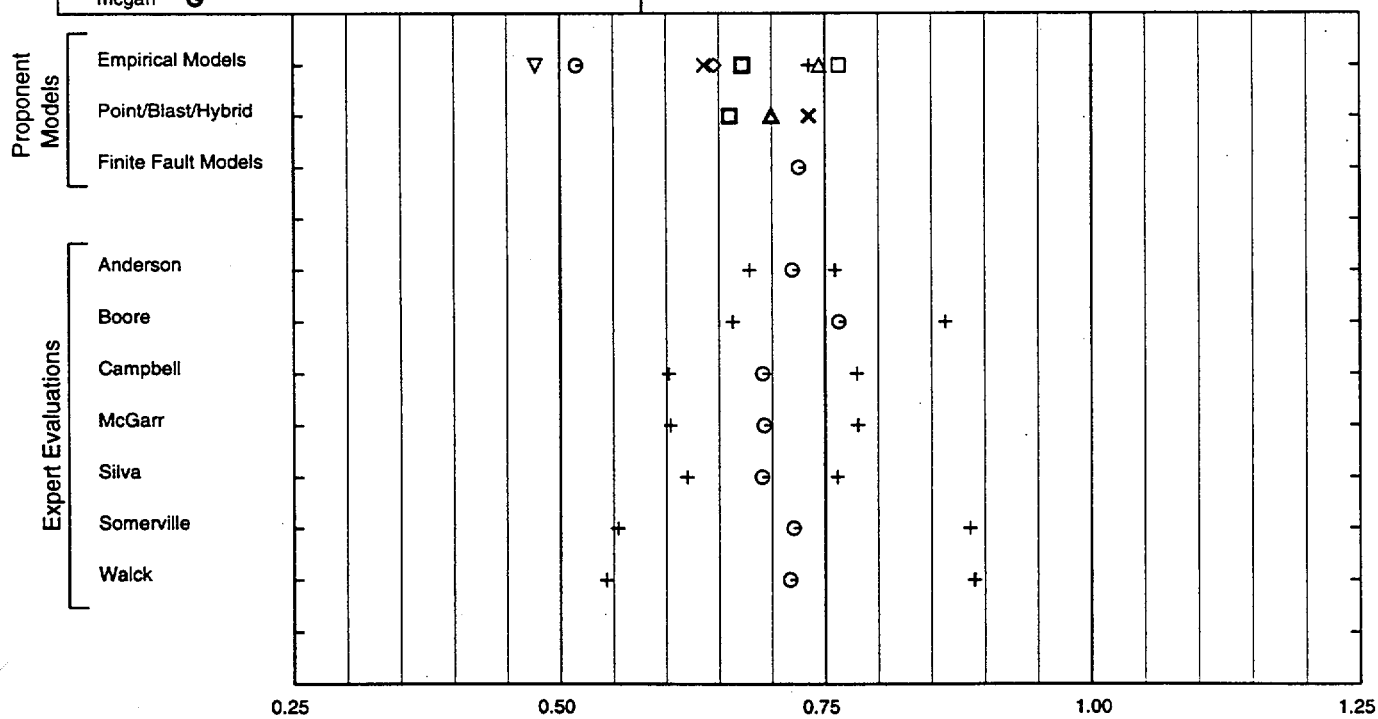
case 2, M= 5.0, shallow, xd= 1 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

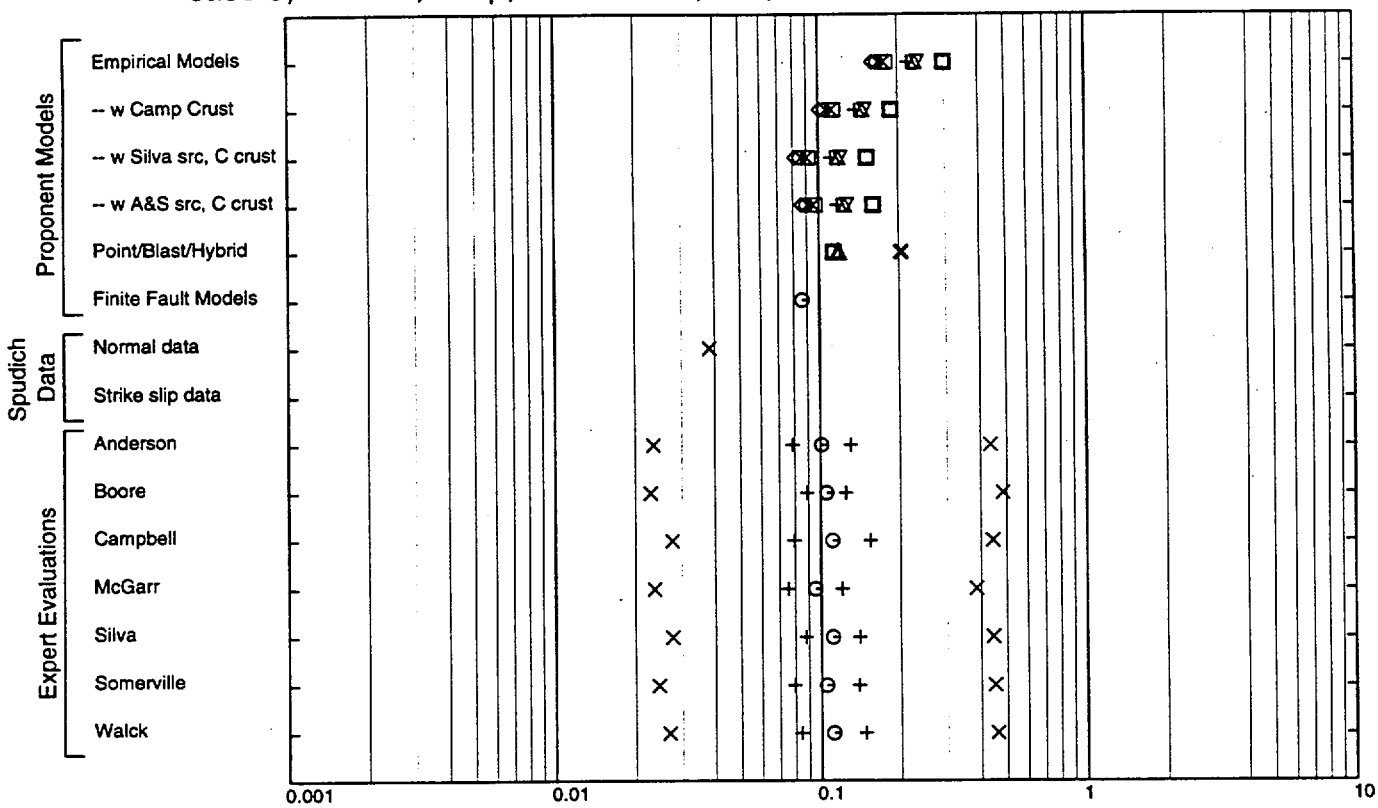
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

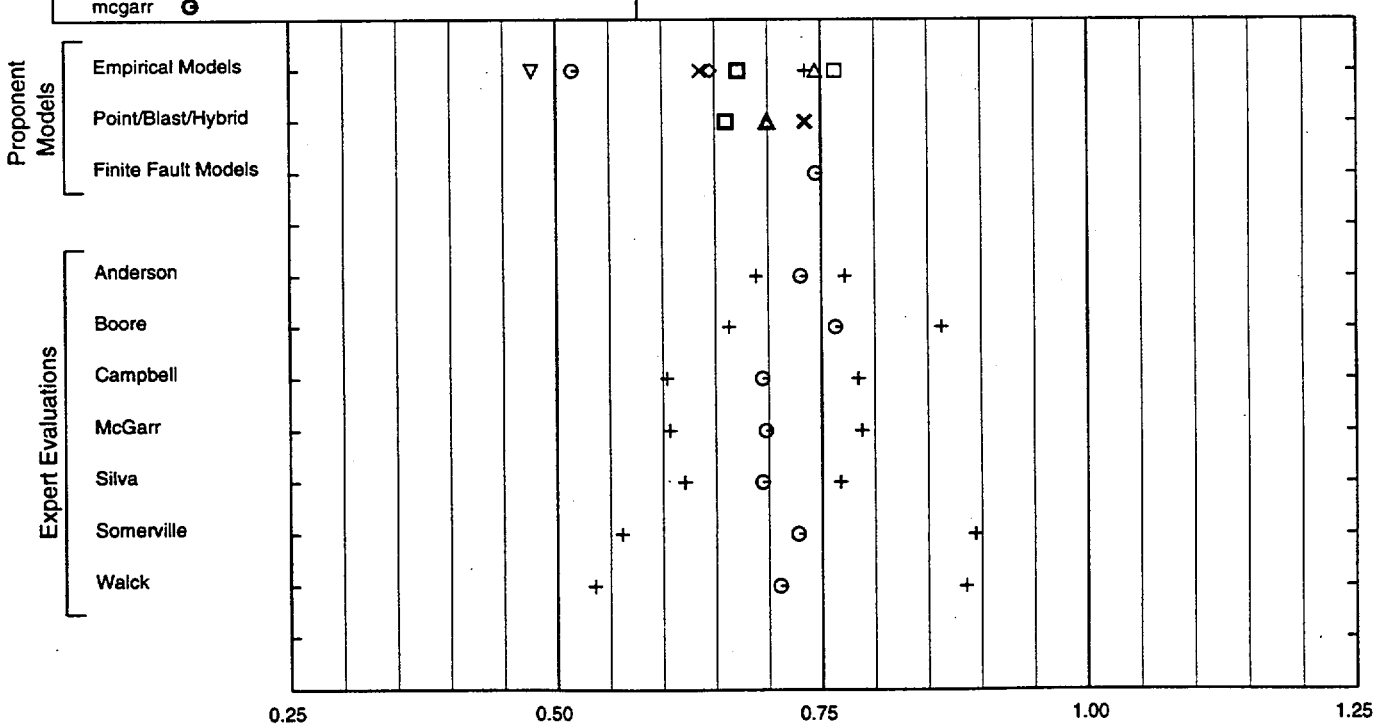
case 3, M= 5.0, deep, xd= 5 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

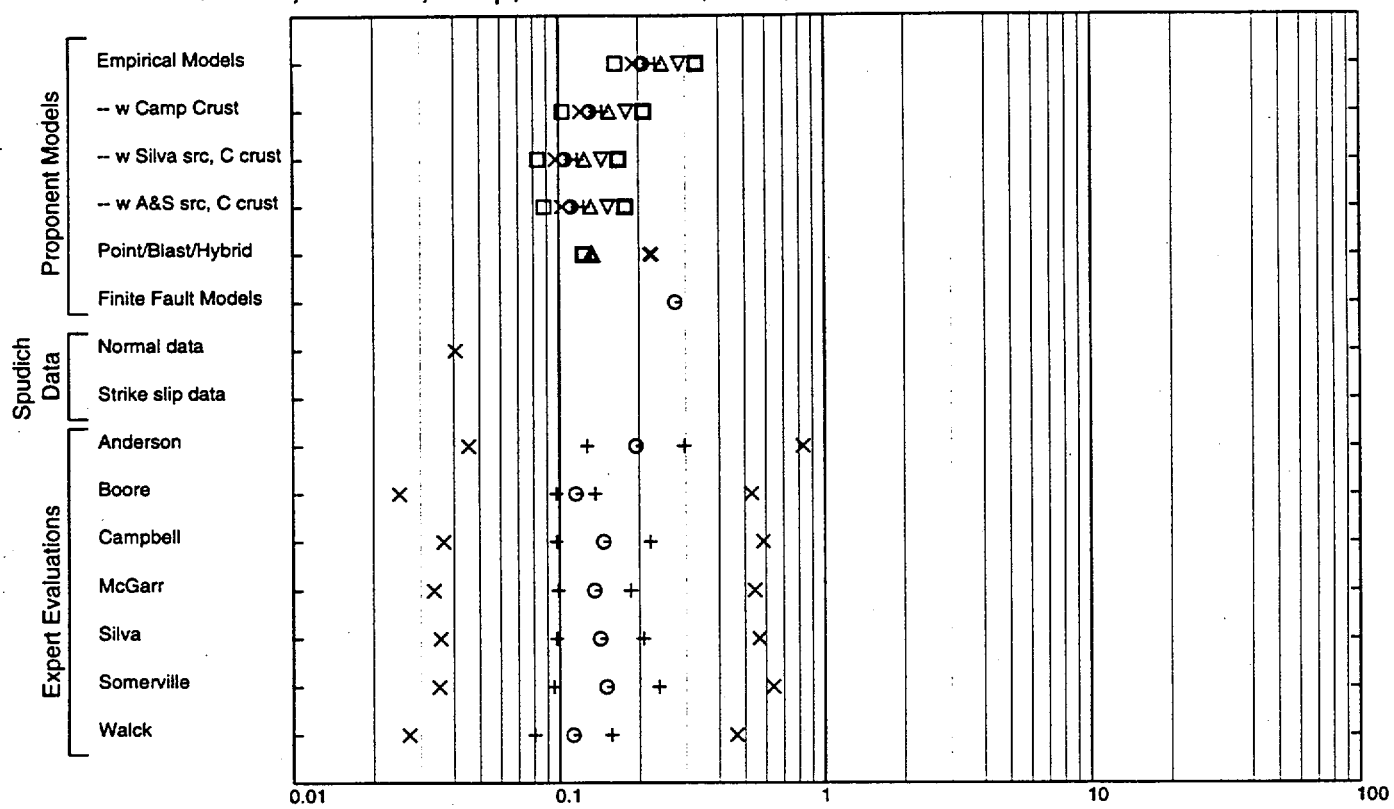
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

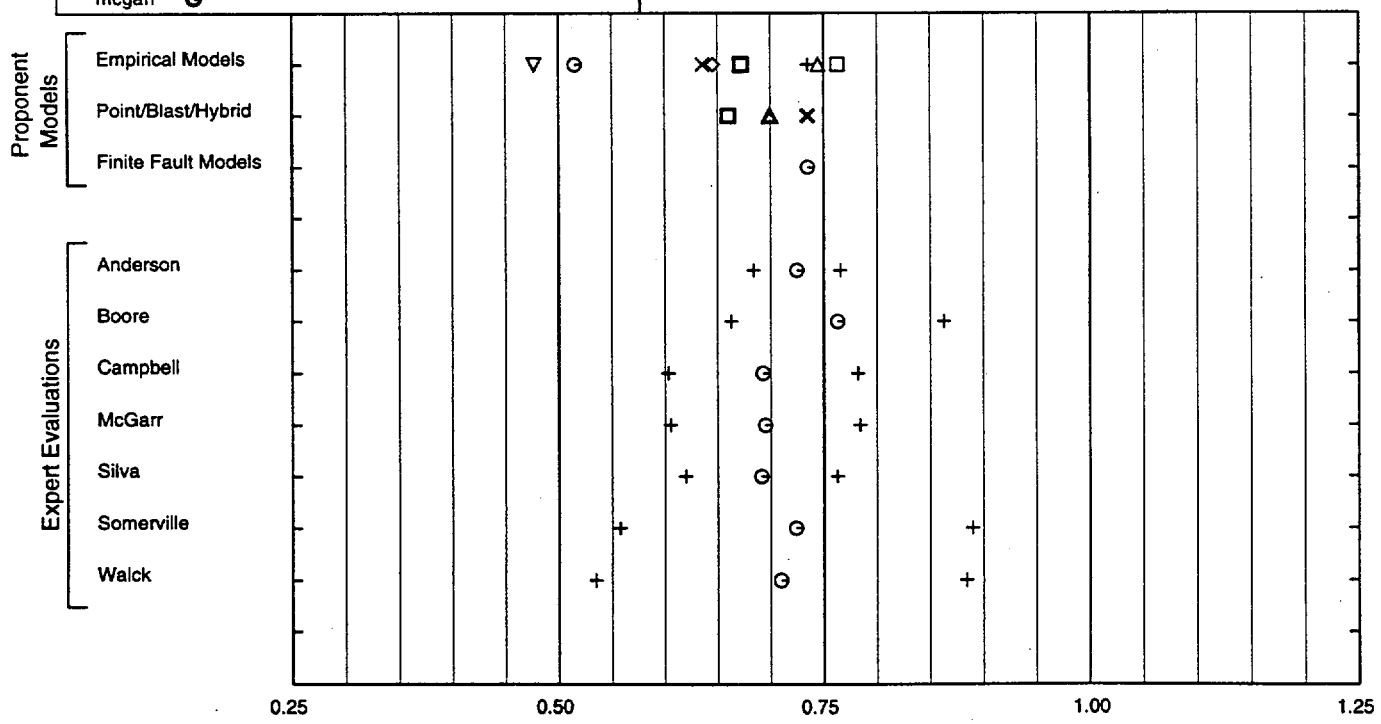
case 4, M= 5.0, deep, xd= 5 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



LEGEND

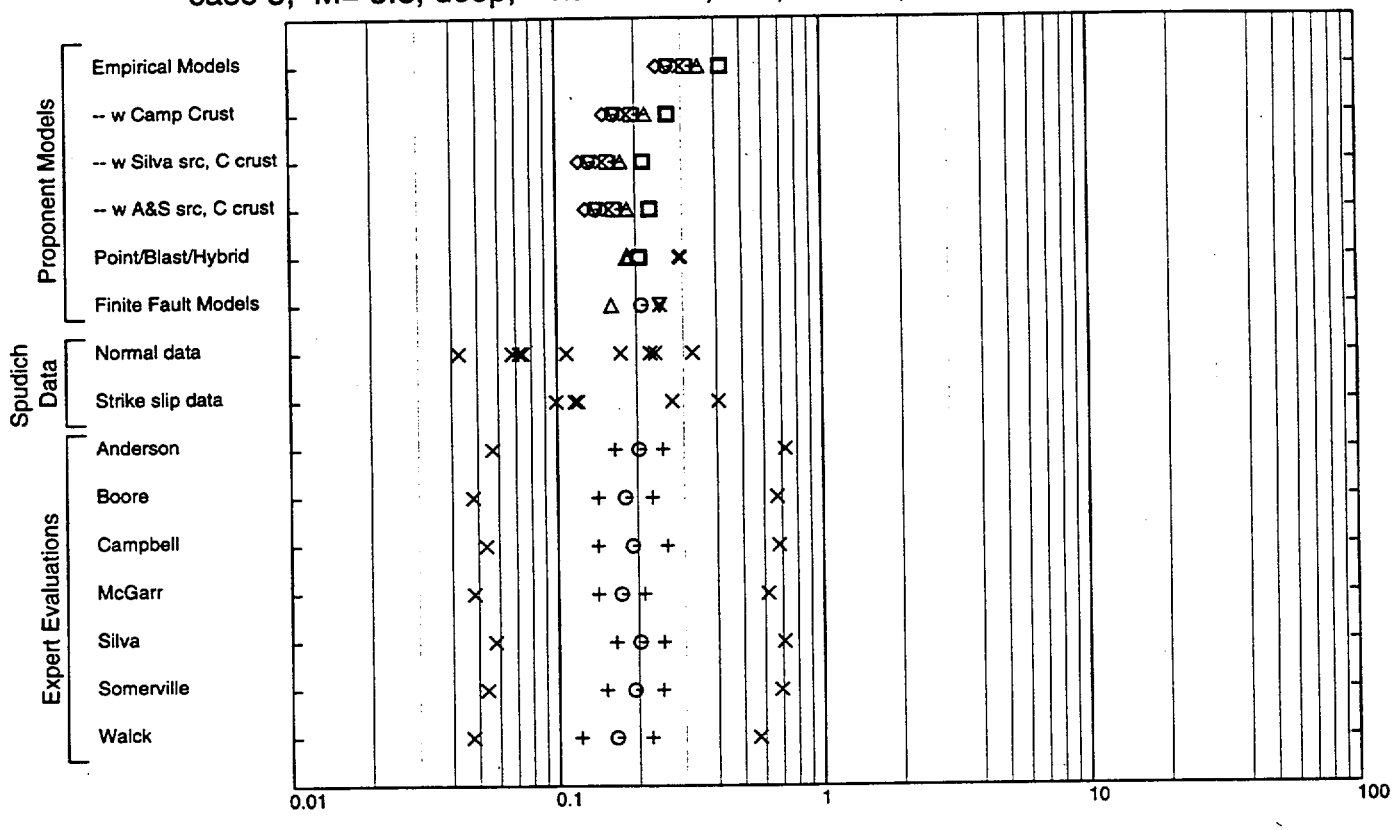
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

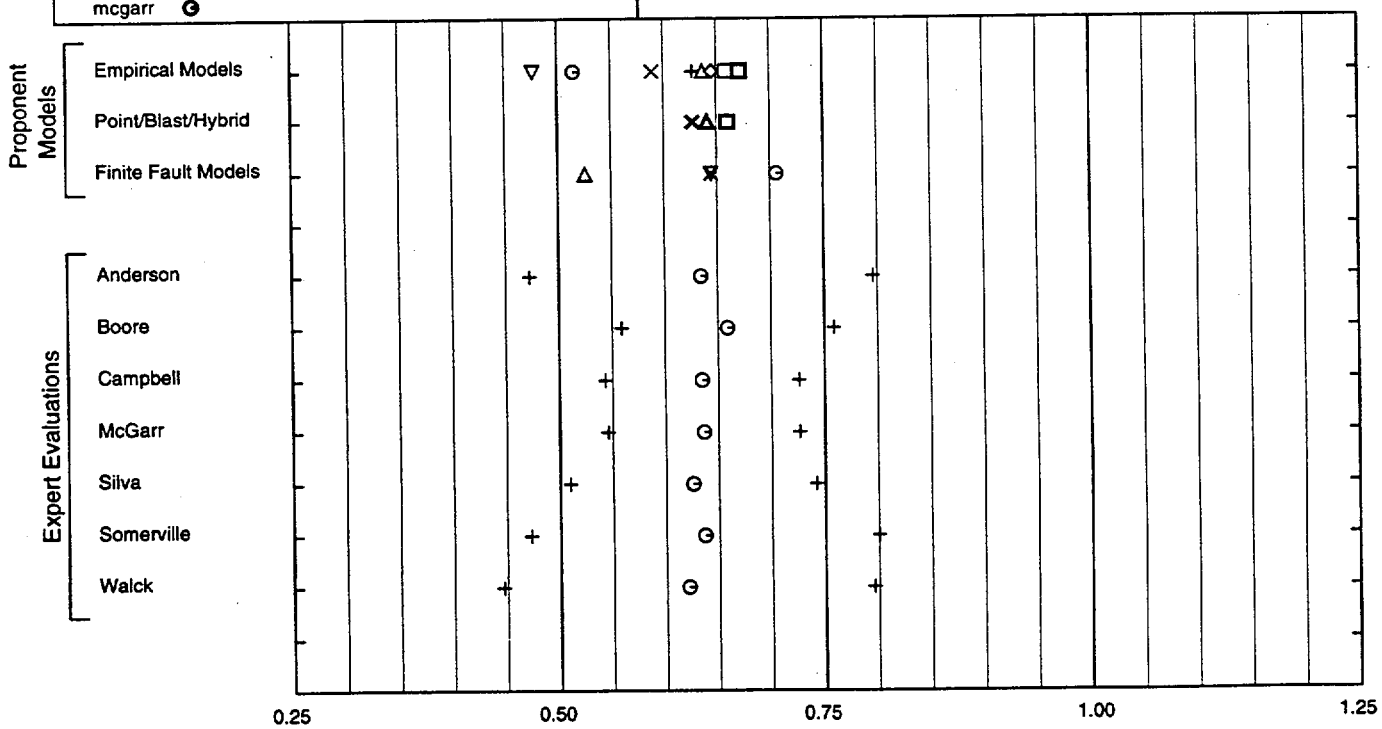
case 5, M= 5.8, deep, xd= 10 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

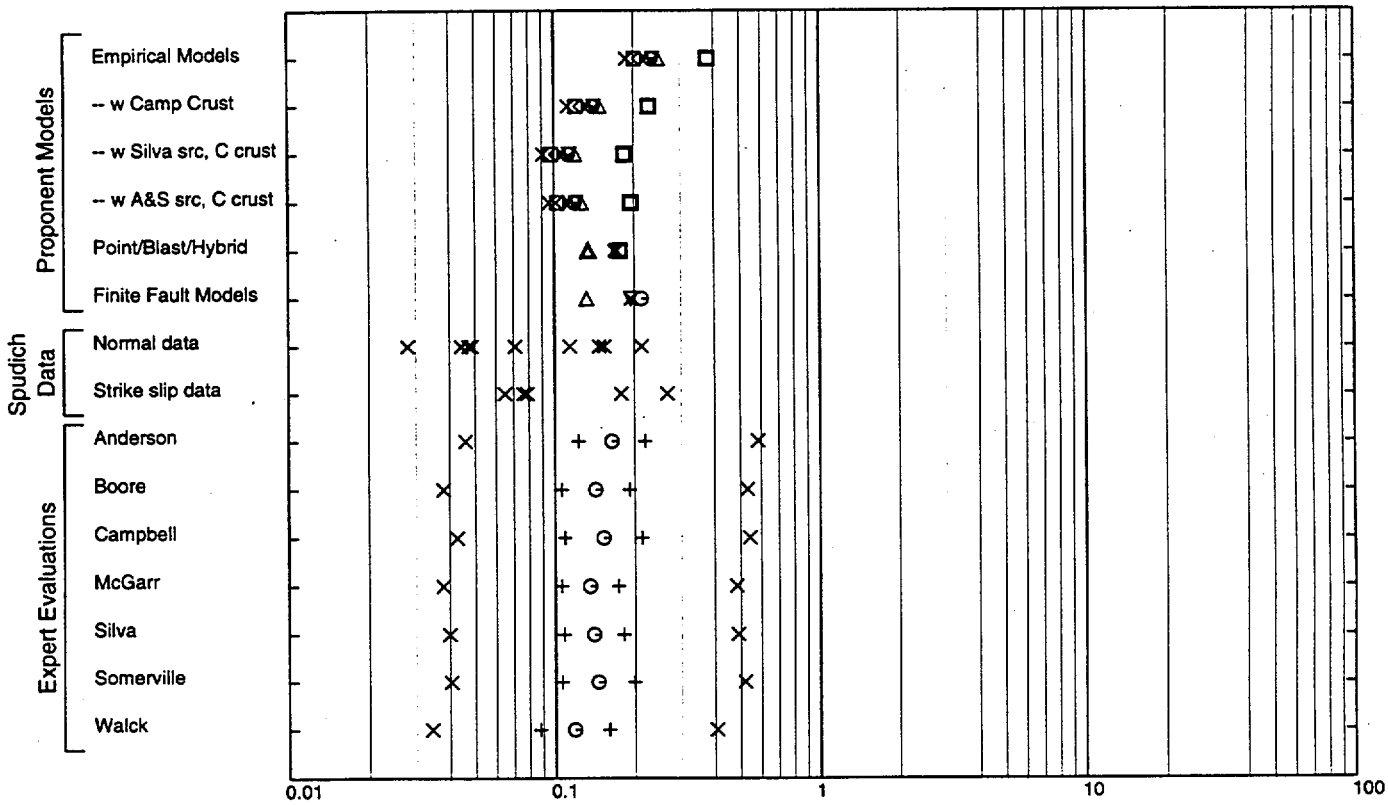
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

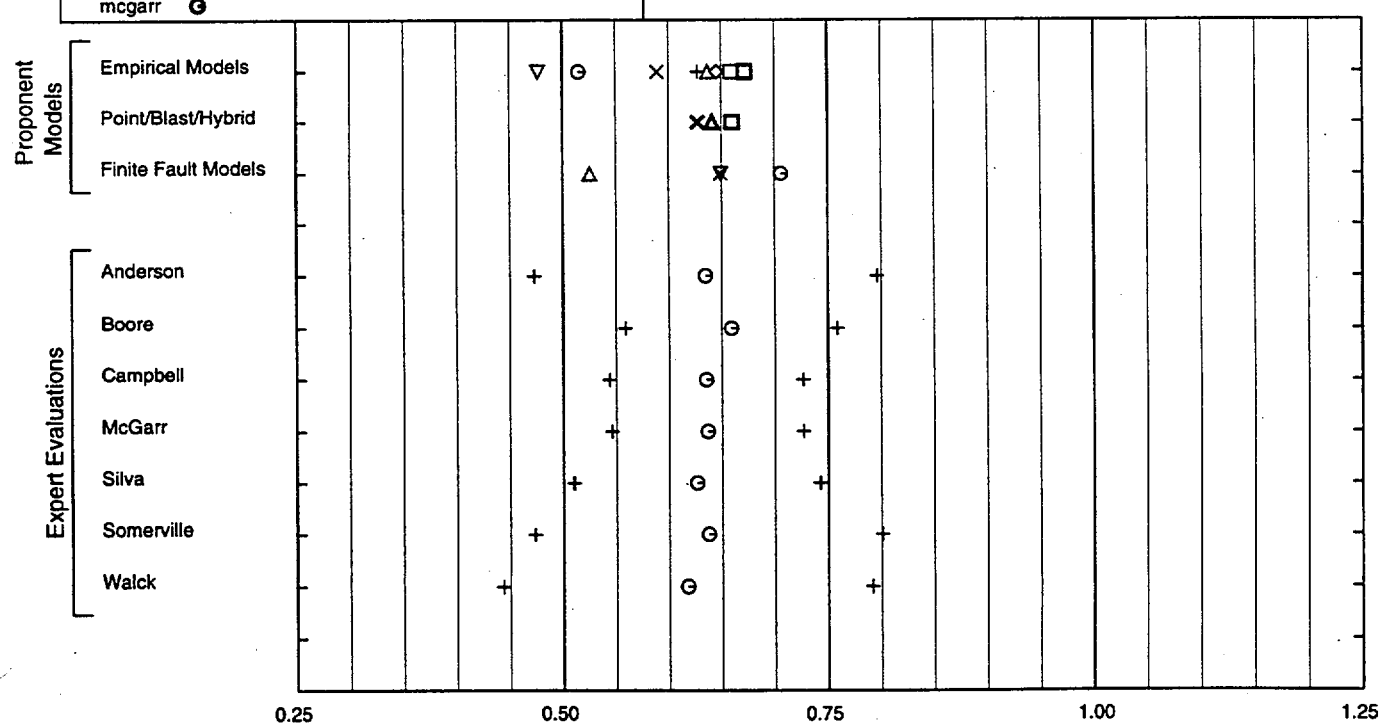
case 6, M= 5.8, deep, xd= 20 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

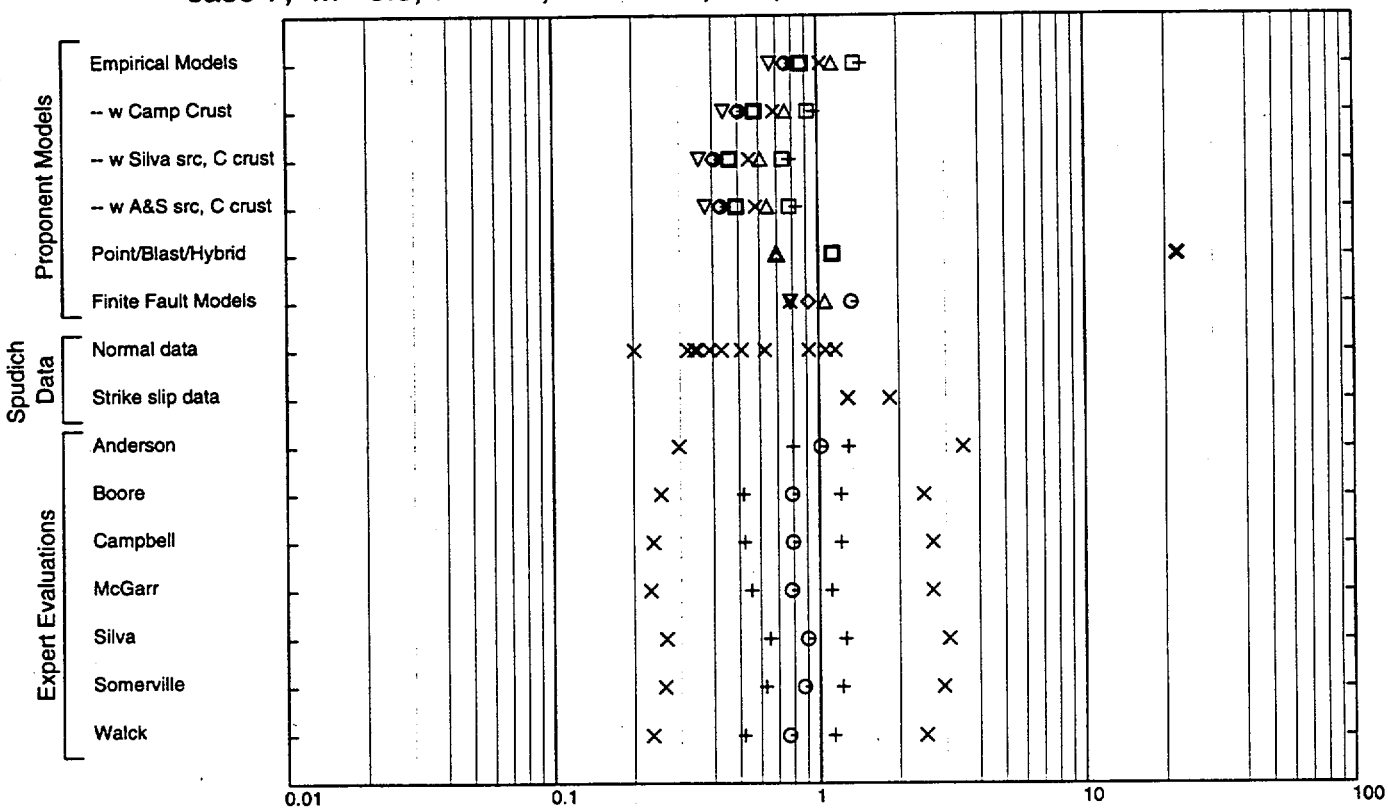
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

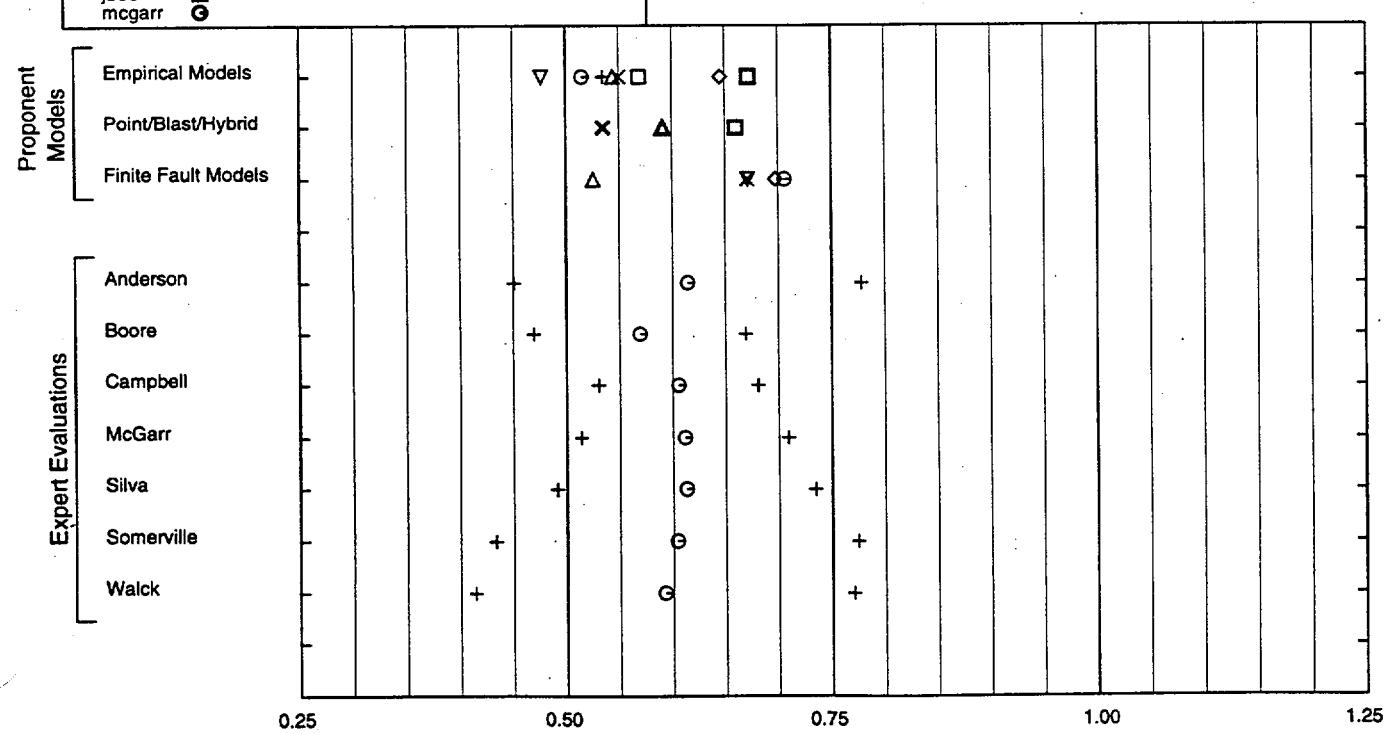
case 7, M= 6.5, shallow, xd= 1 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

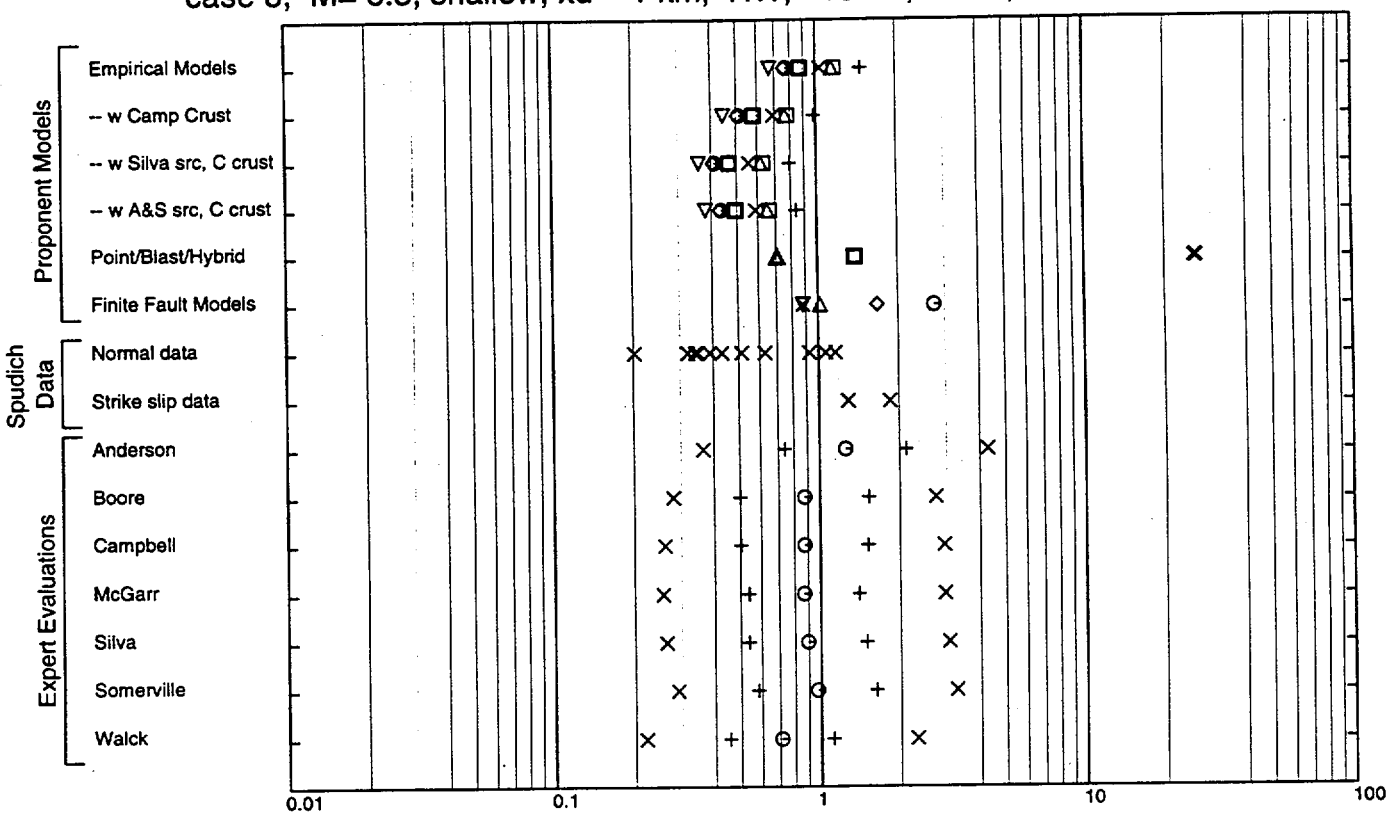
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

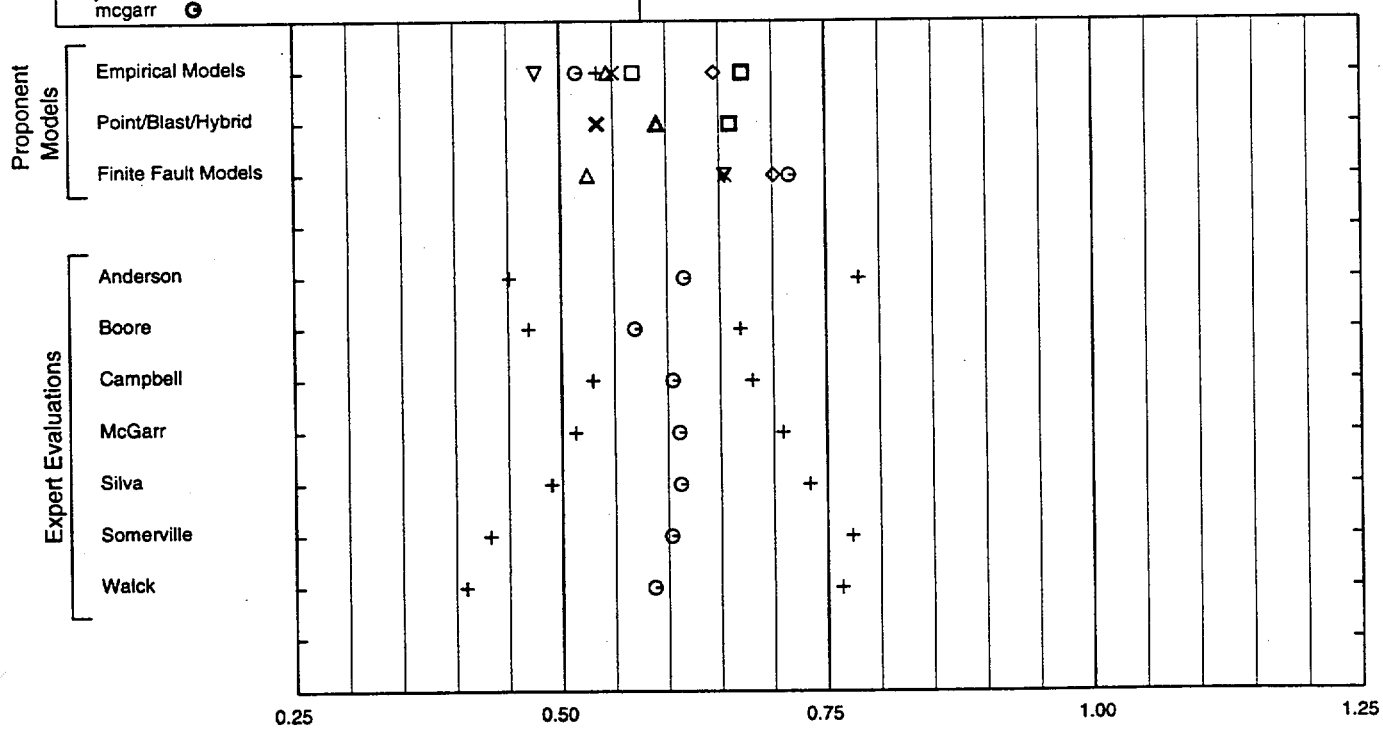
case 8, M= 6.5, shallow, xd= 1 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

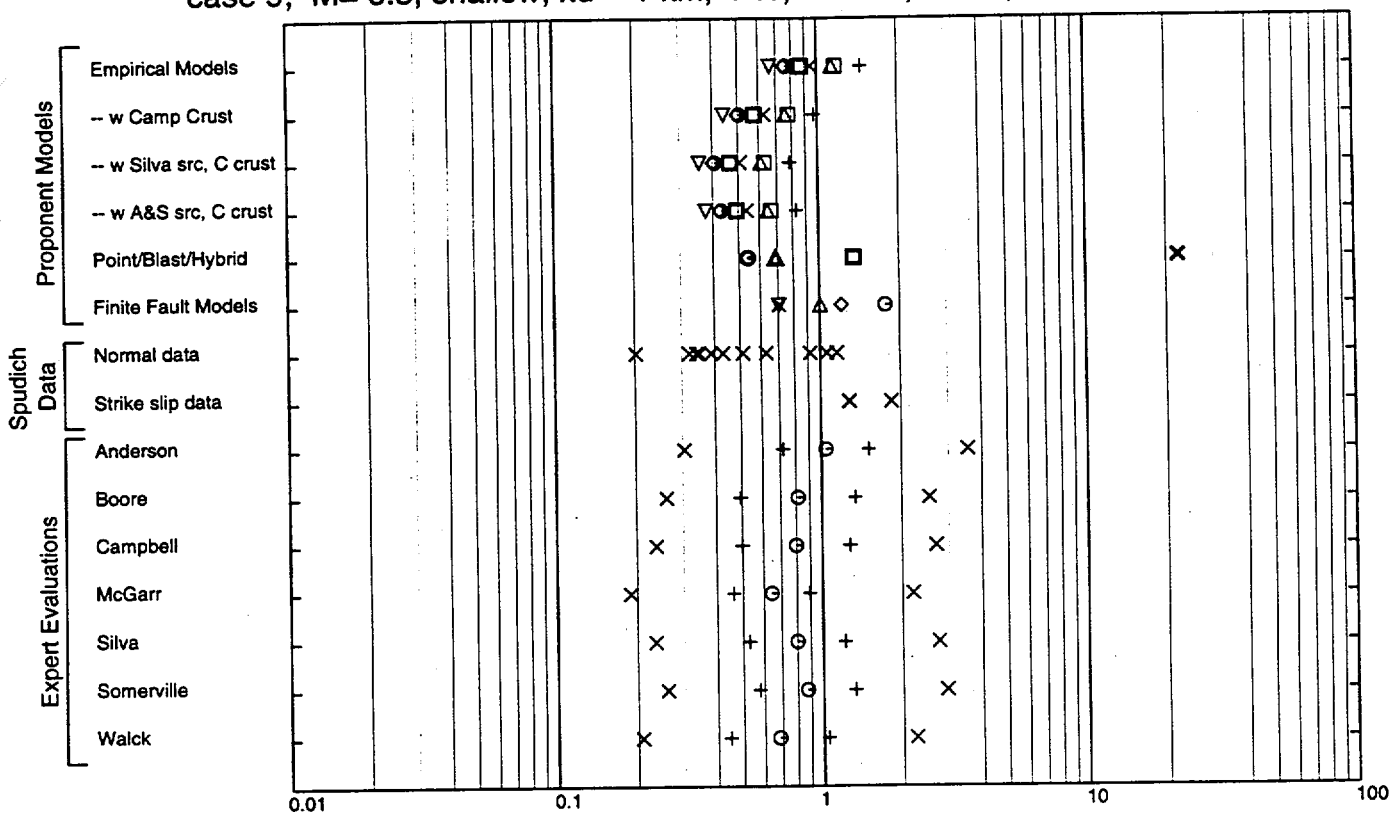
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

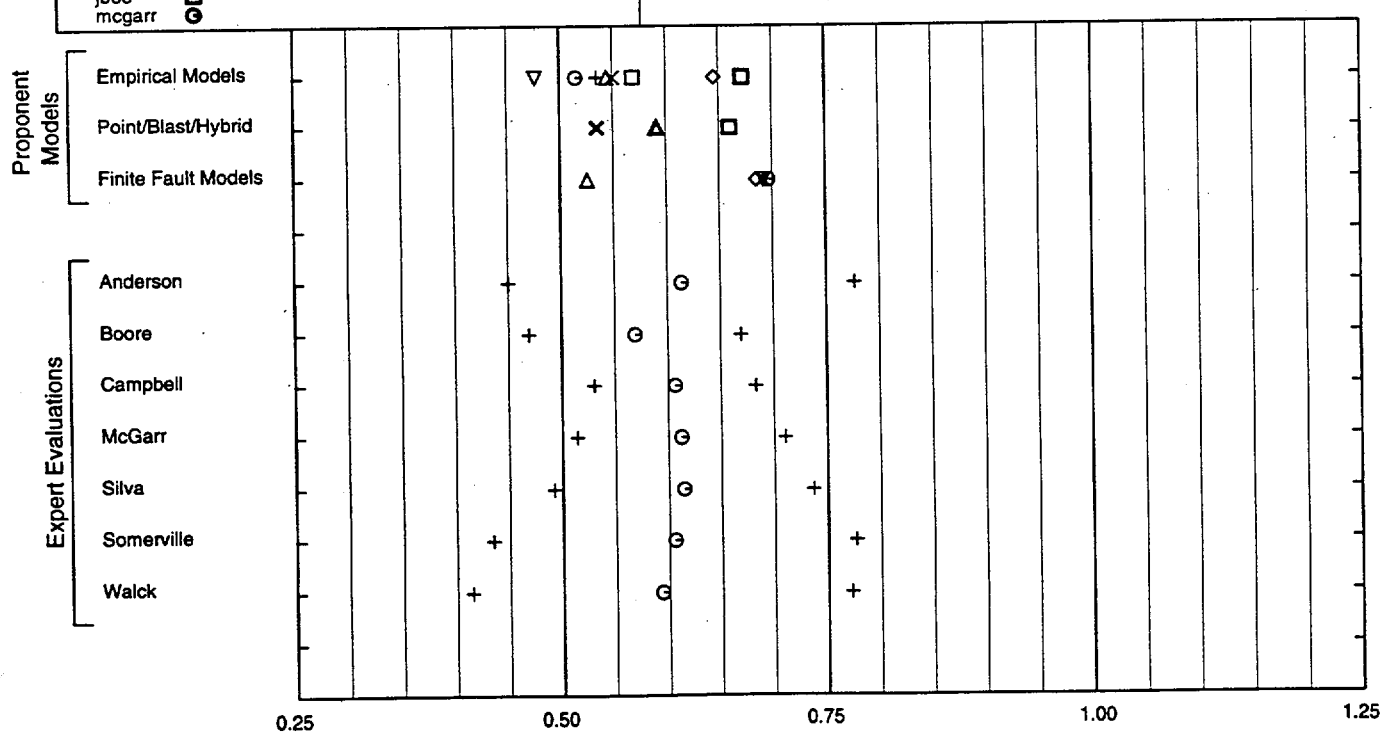
case 9, M= 6.5, shallow, xd= -1 km, FW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

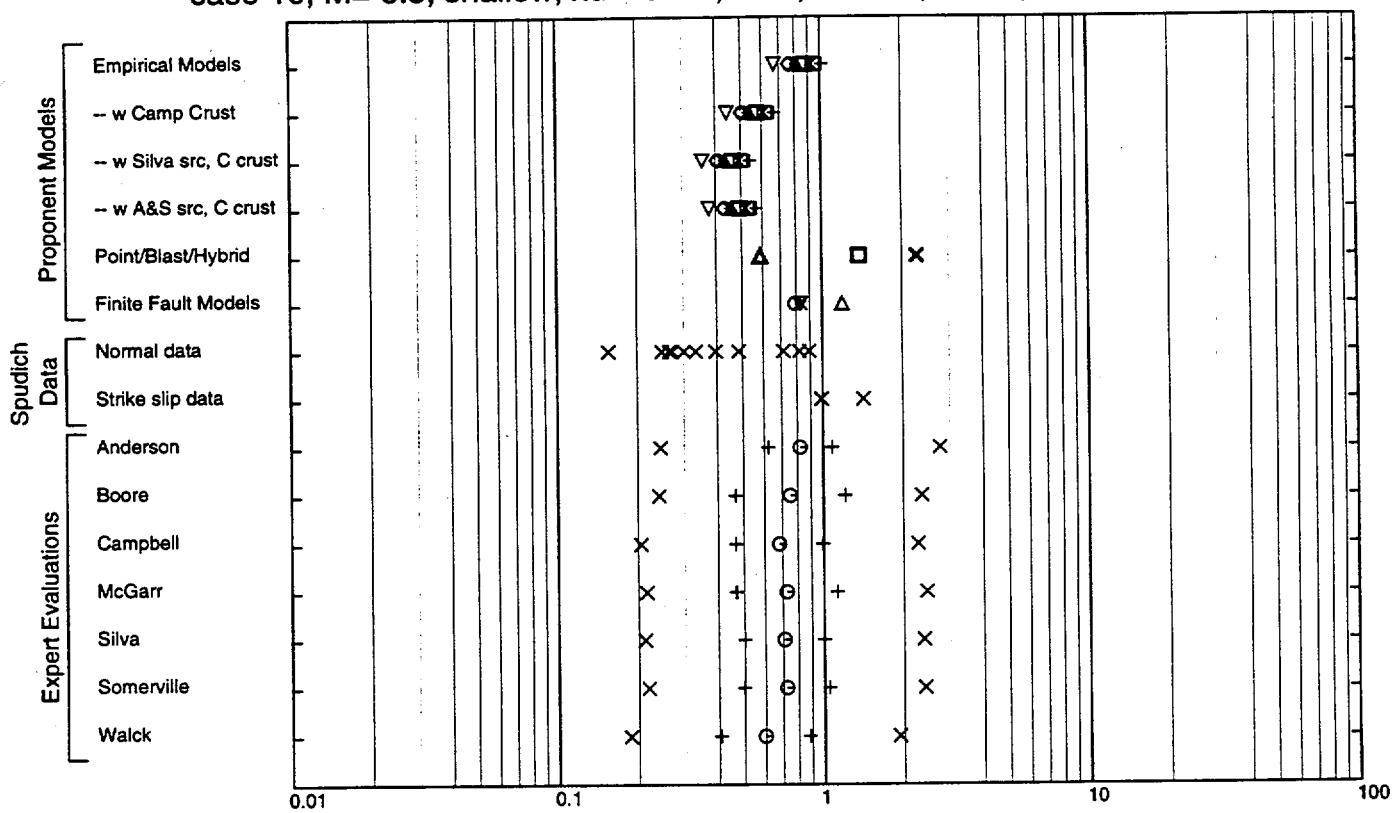
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

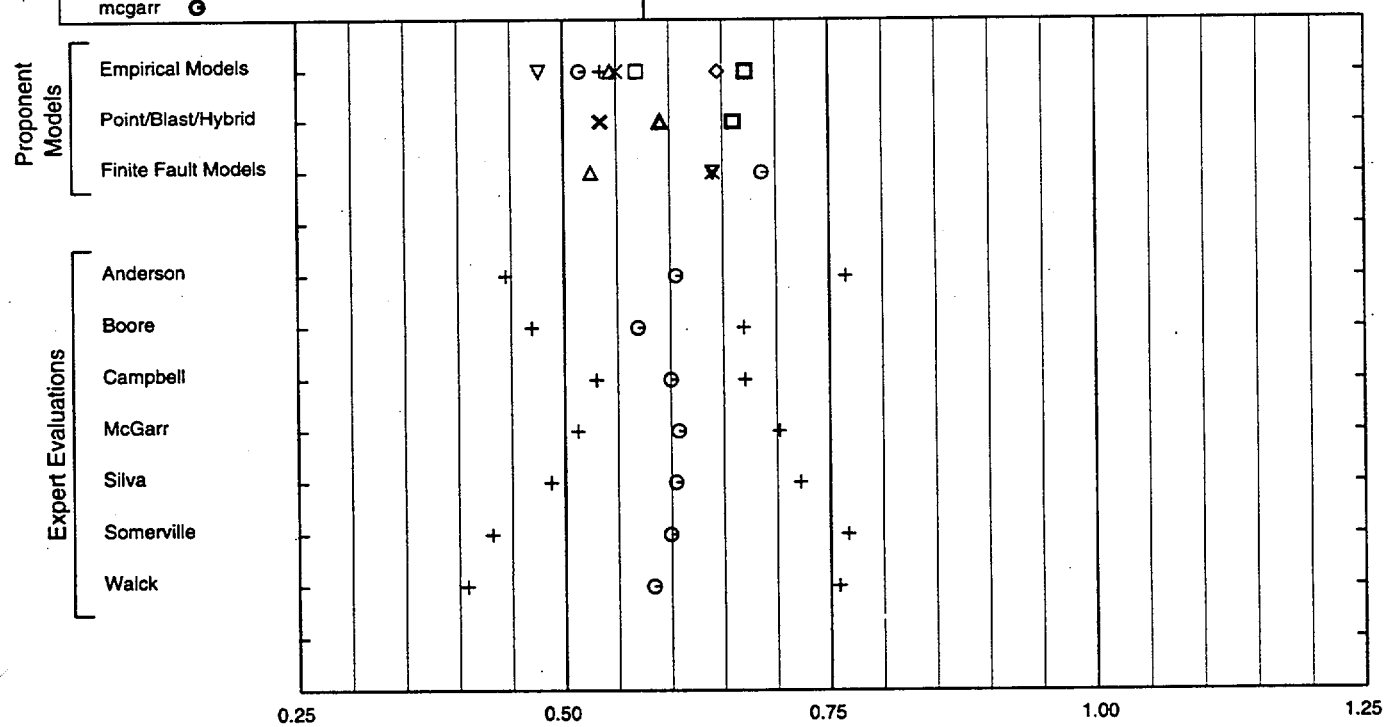
case 10, M= 6.5, shallow, xd= 5 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

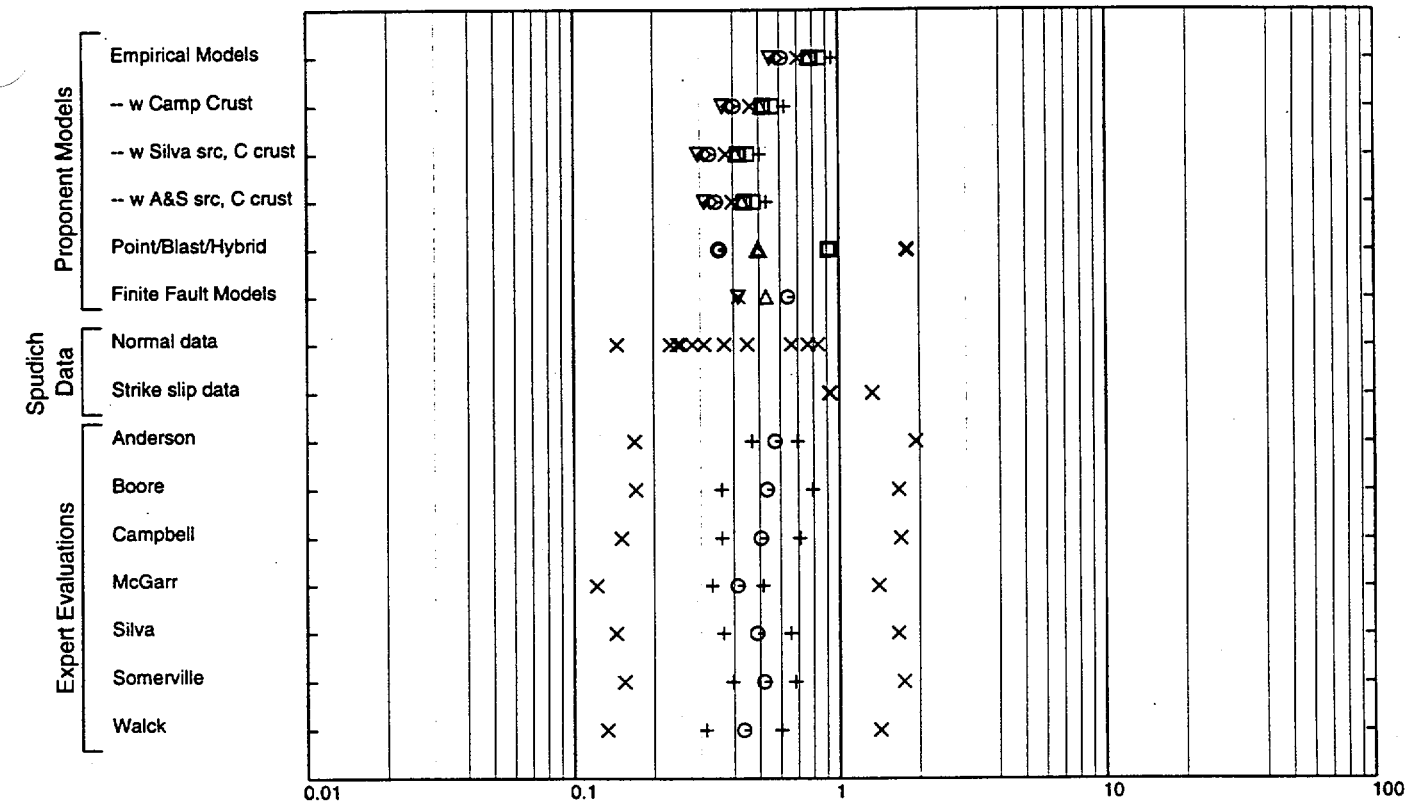
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	△	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

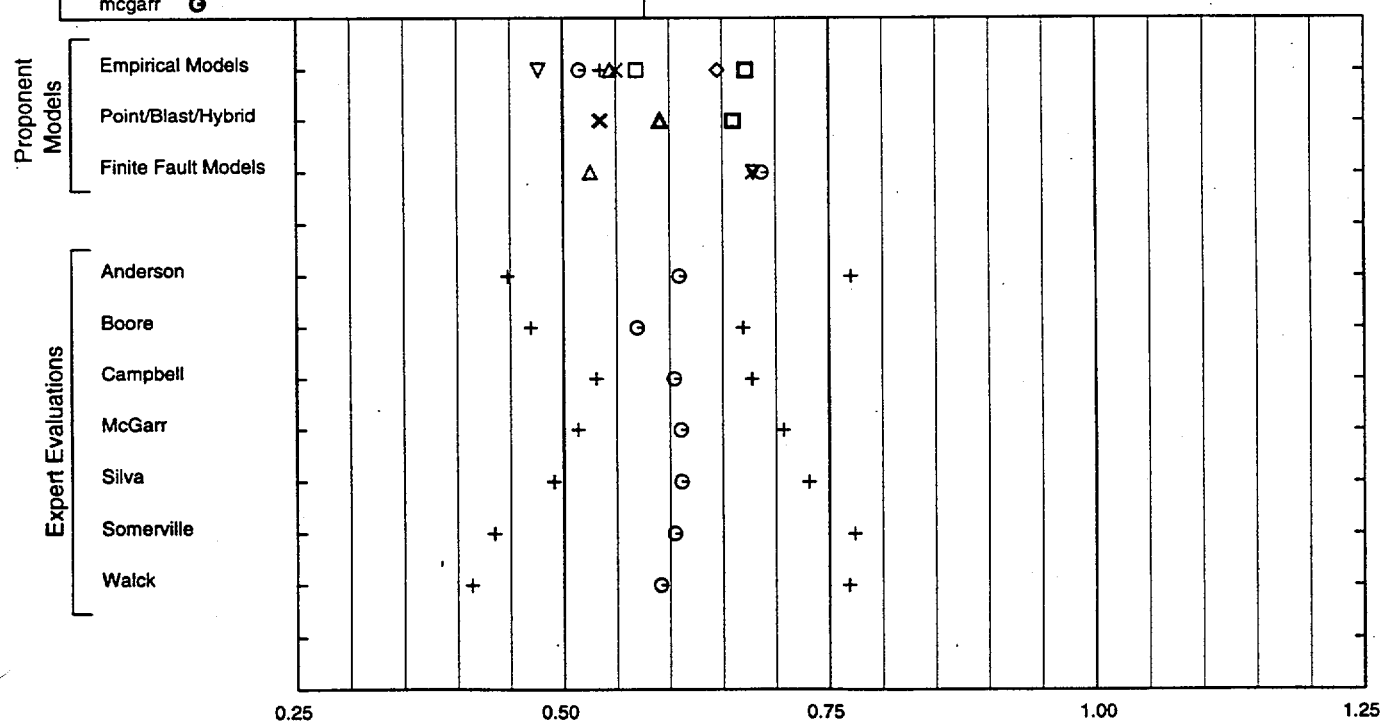
case 11, M= 6.5, shallow, xd= -5 km, FW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

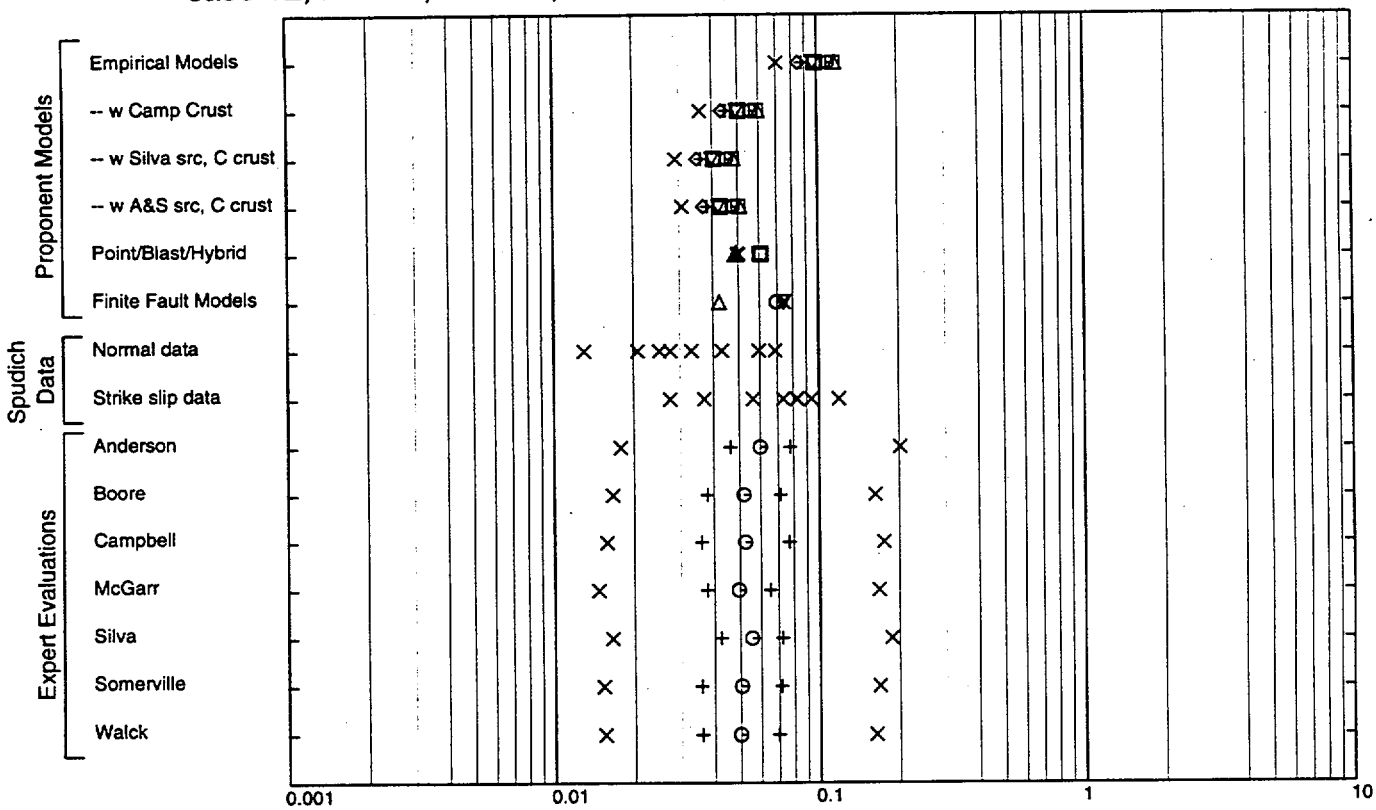
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

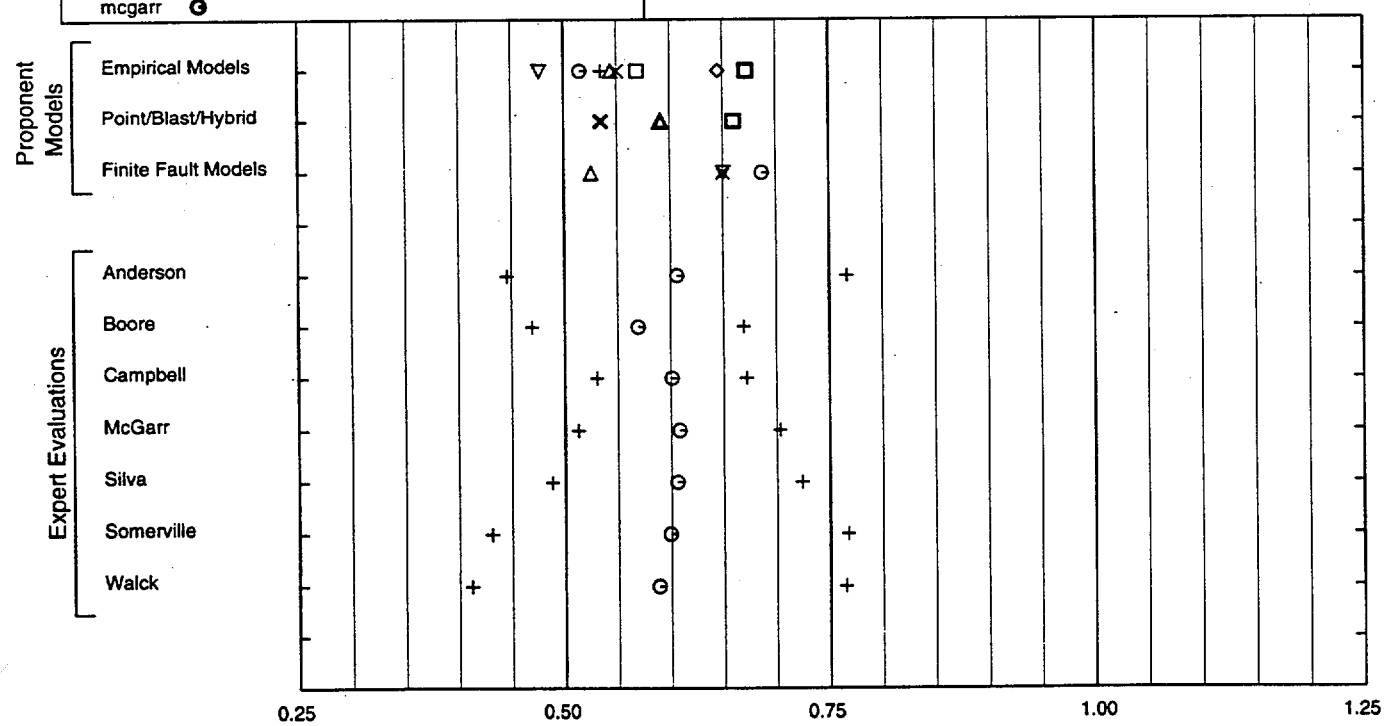
case 12, M= 6.5, shallow, xd= 50 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

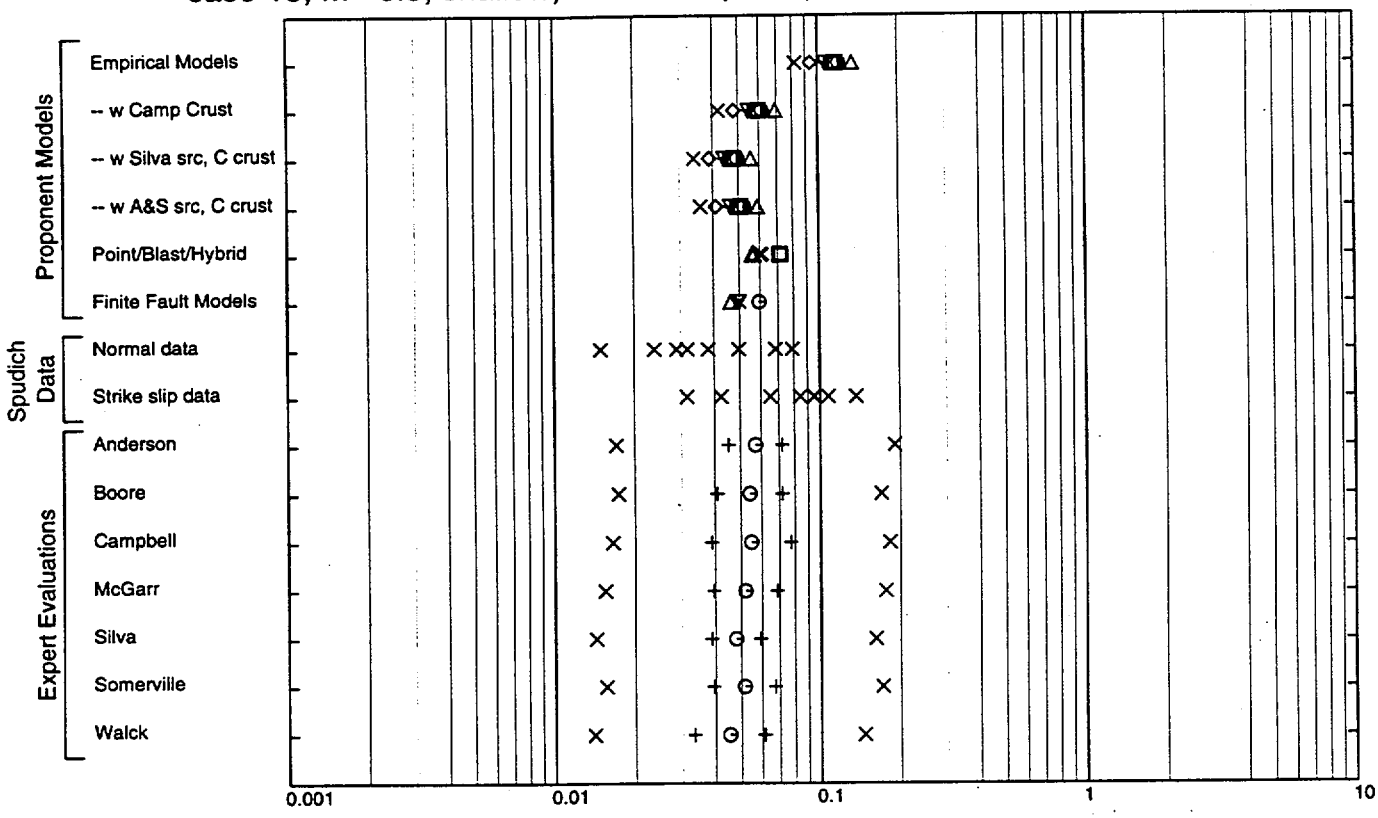
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



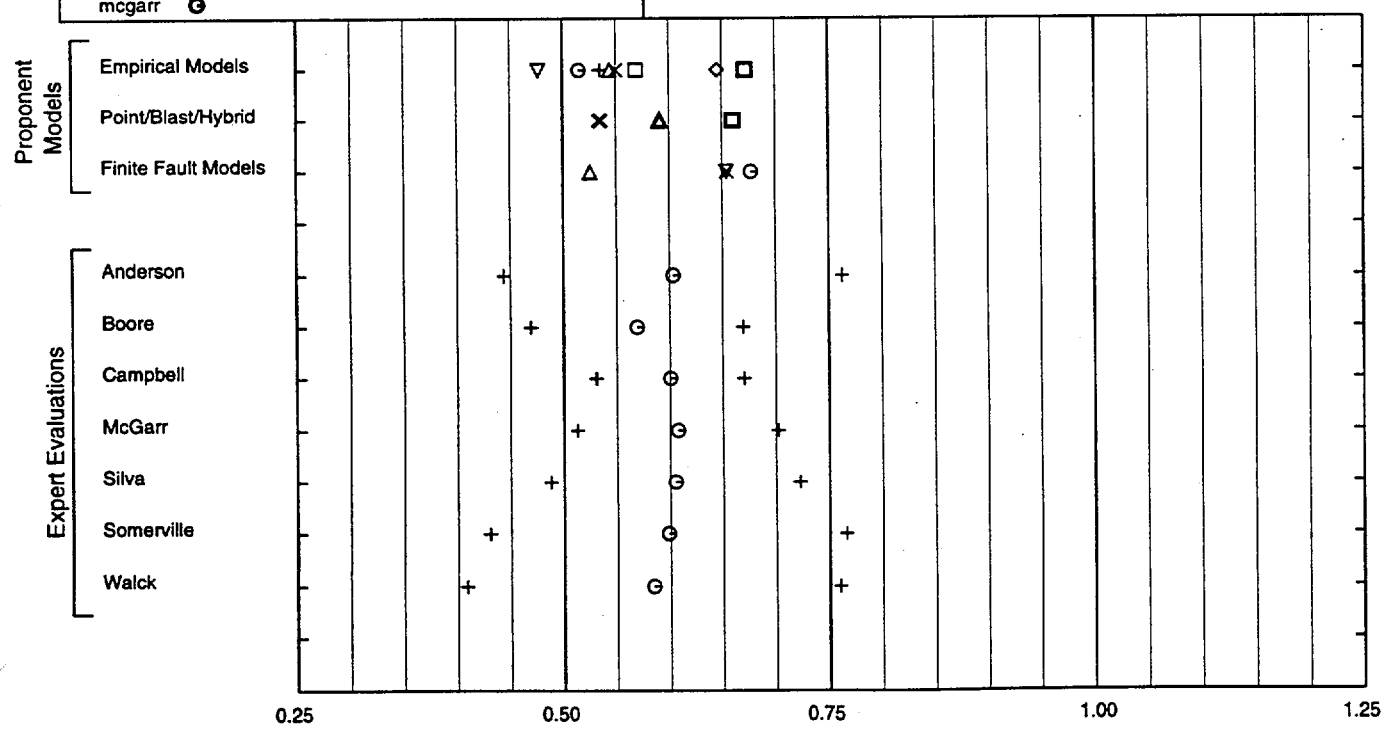
Aleatory Sigma (LN units) w/ Comp Var.

case 13, M= 6.5, shallow, xd= 50 km, HW, 10 Hz, HOR, 6/5/97, Rev 1

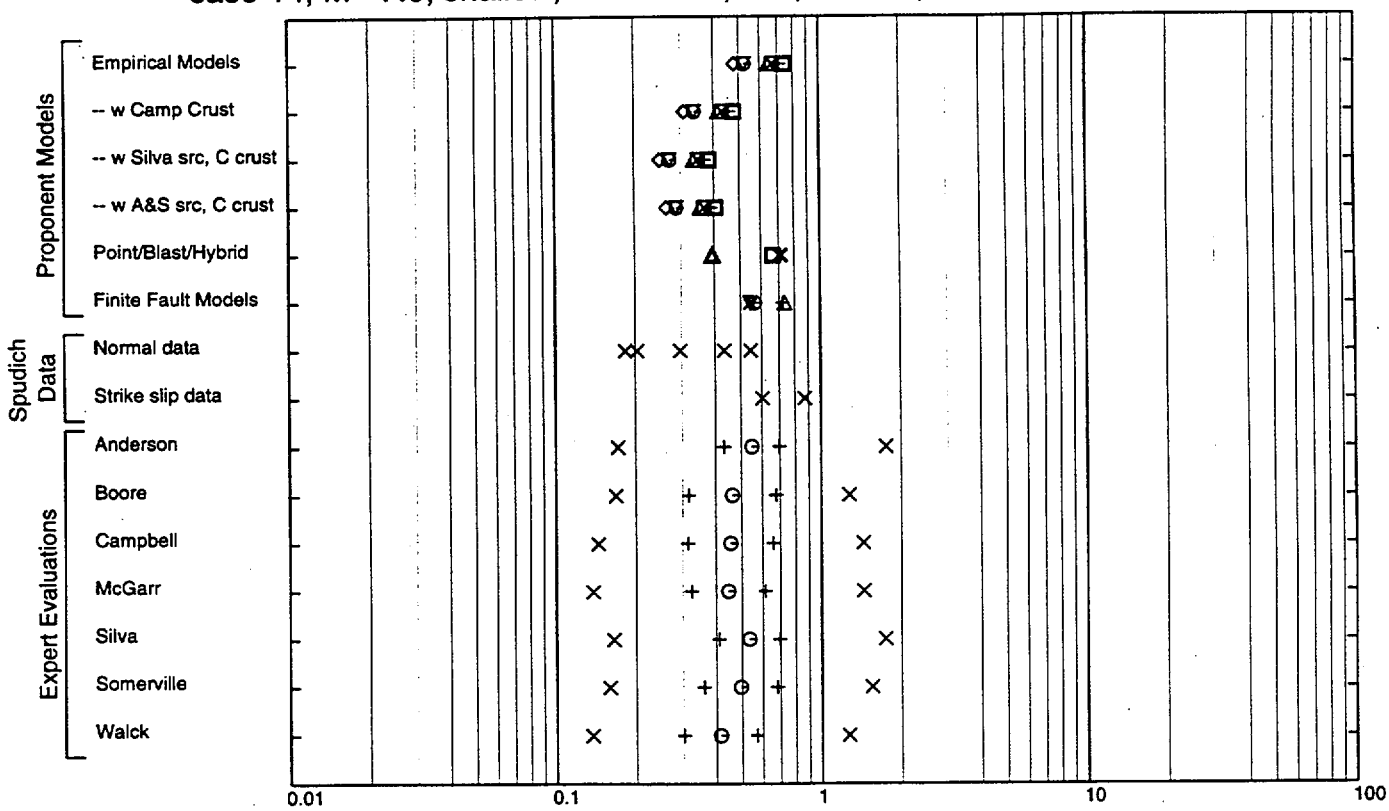


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



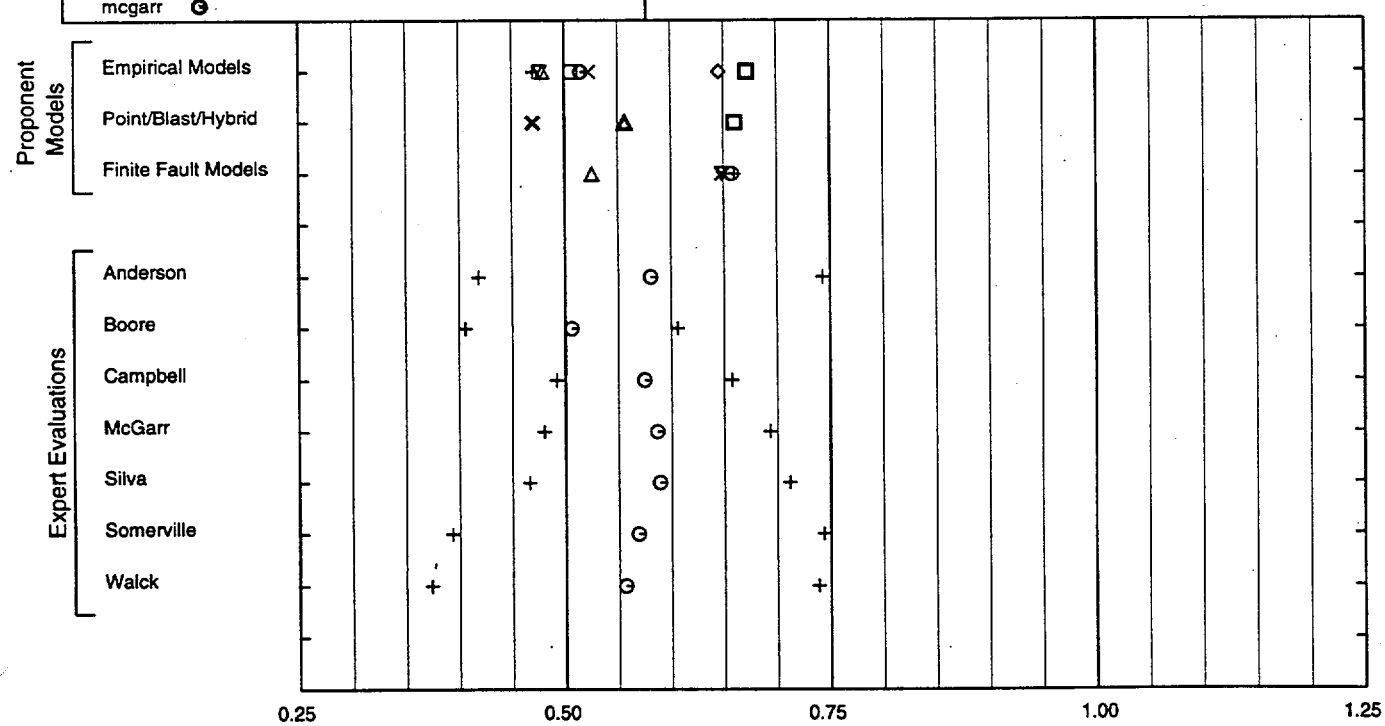
case 14, M= 7.0, shallow, xd= 10 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



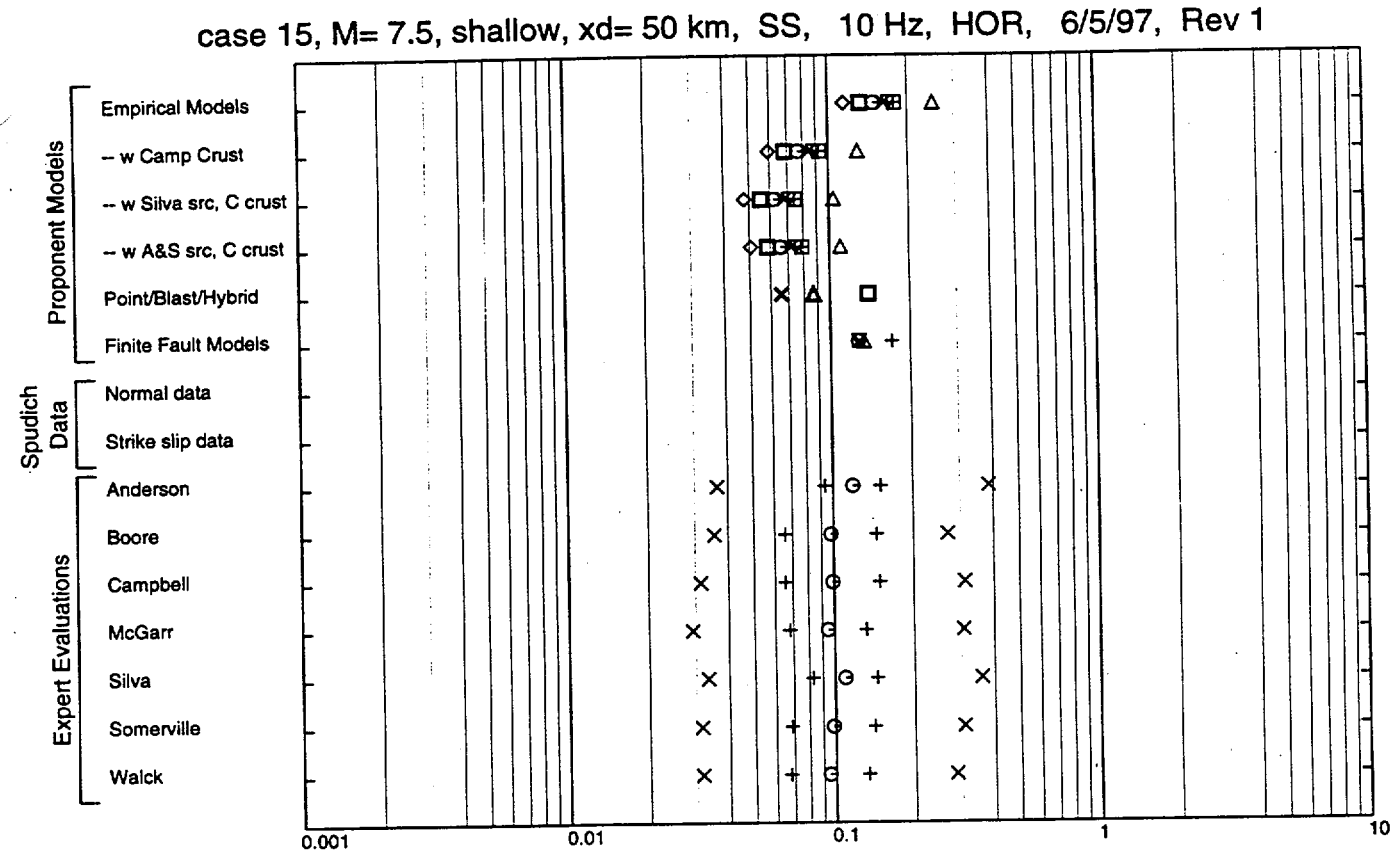
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

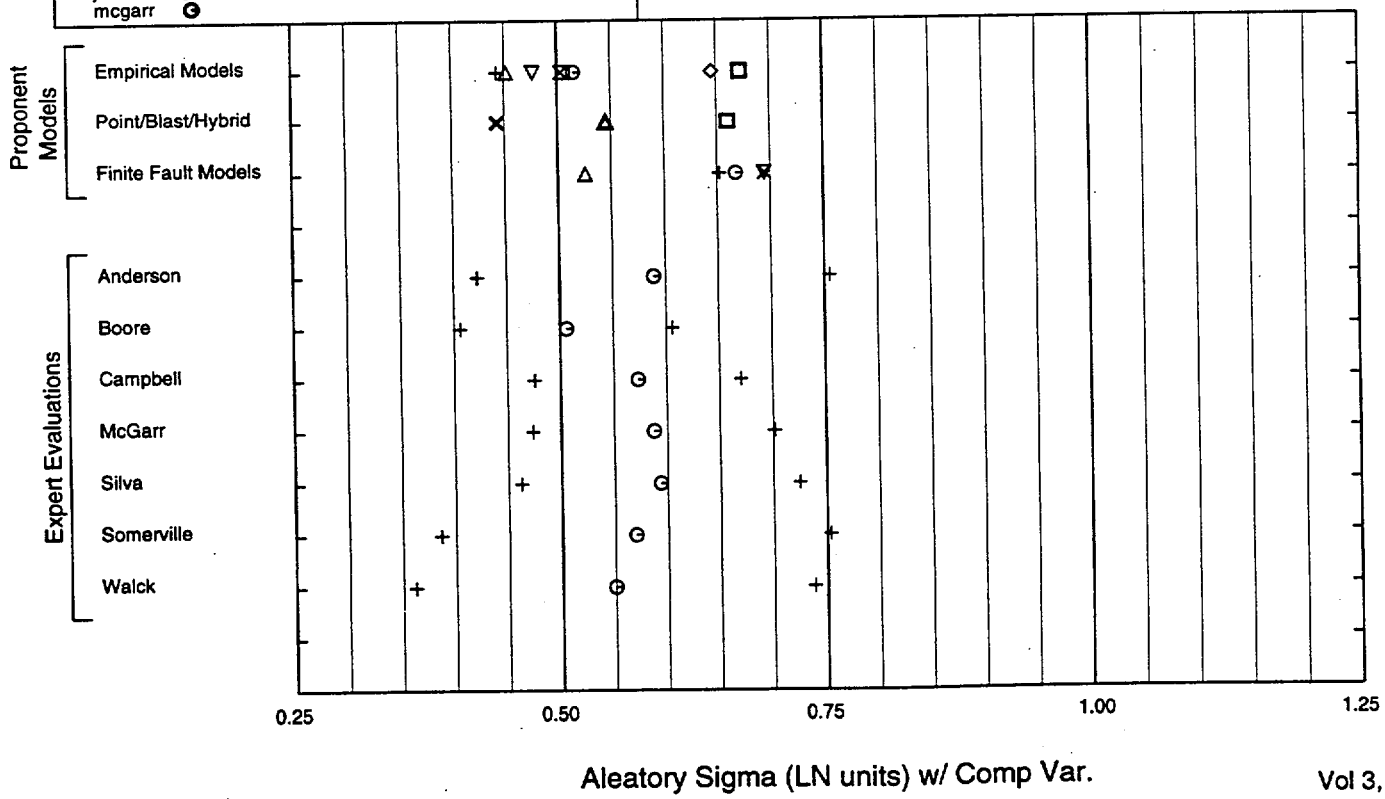


Aleatory Sigma (LN units) w/ Comp Var.

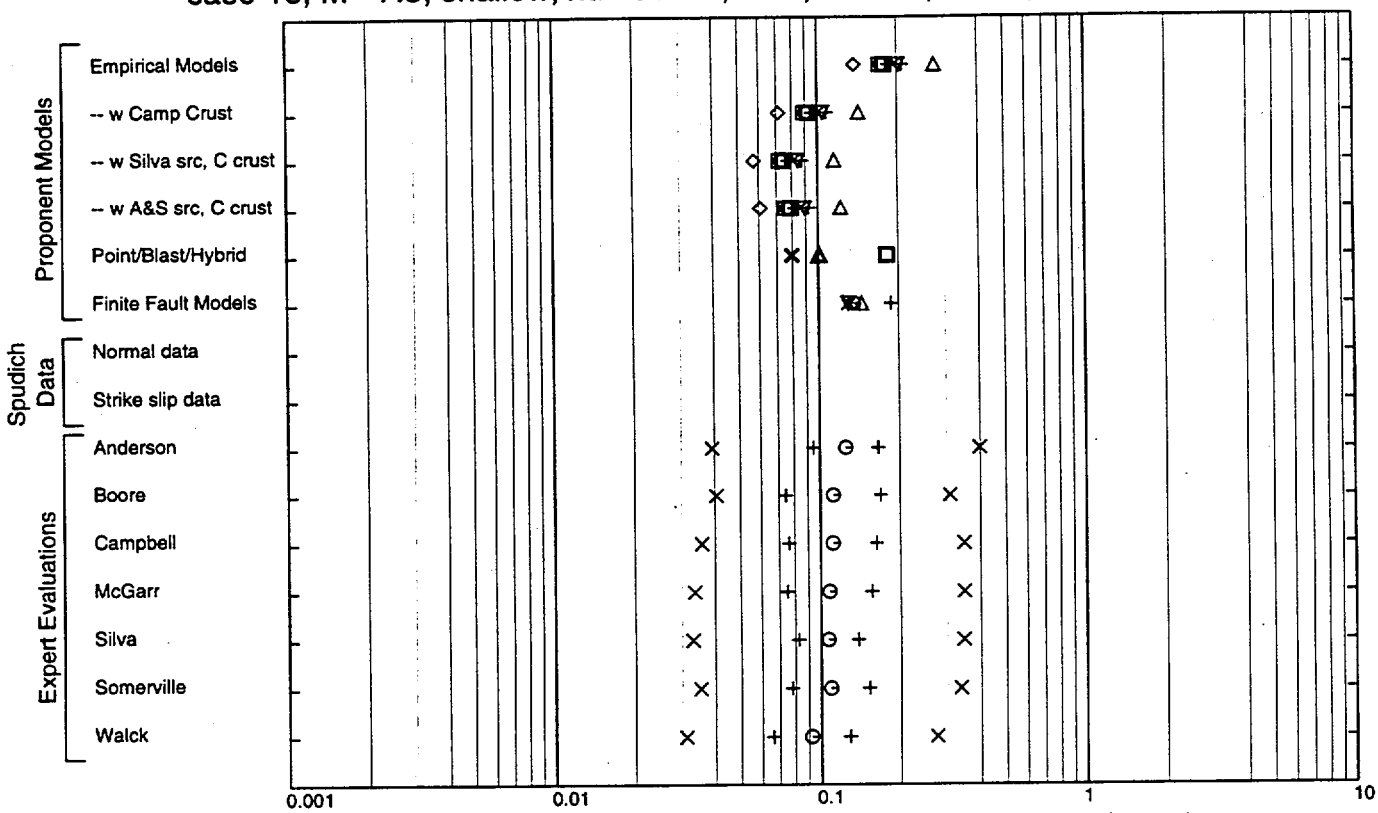


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



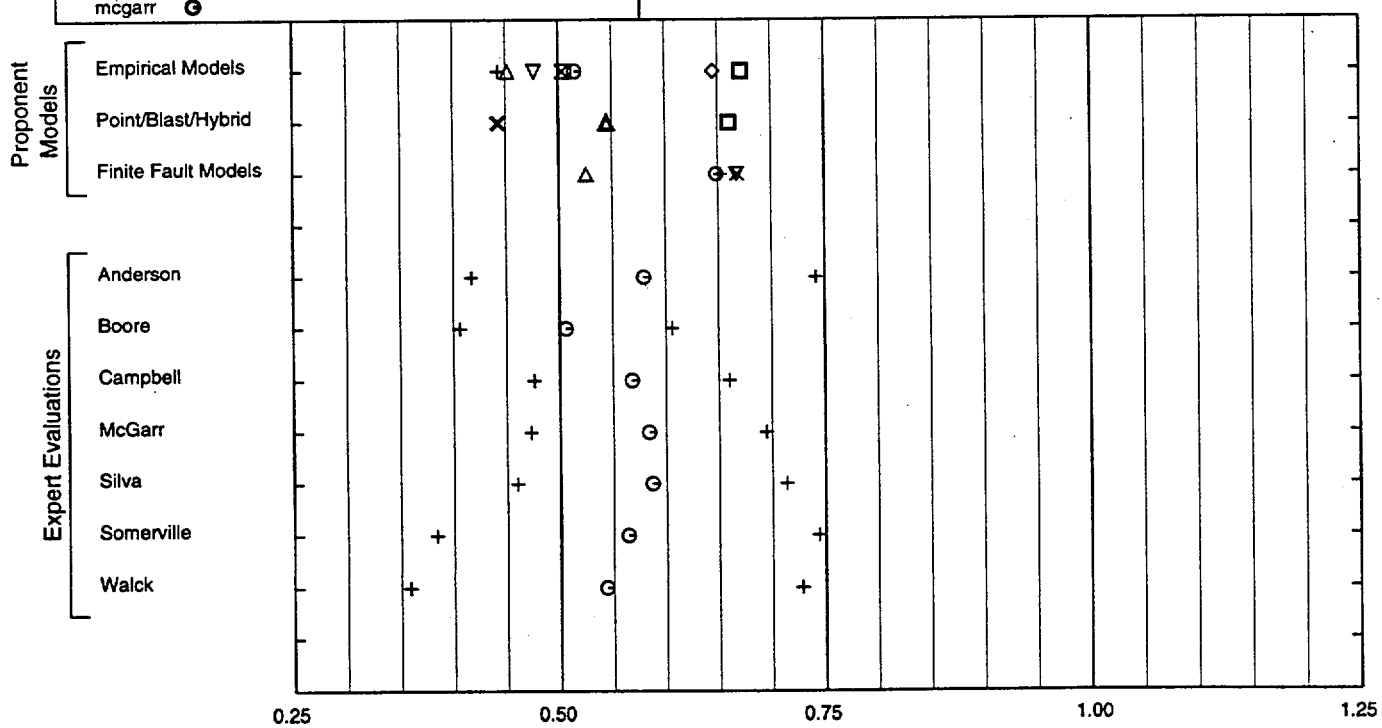
case 16, M= 7.5, shallow, xd= 50 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



LEGEND

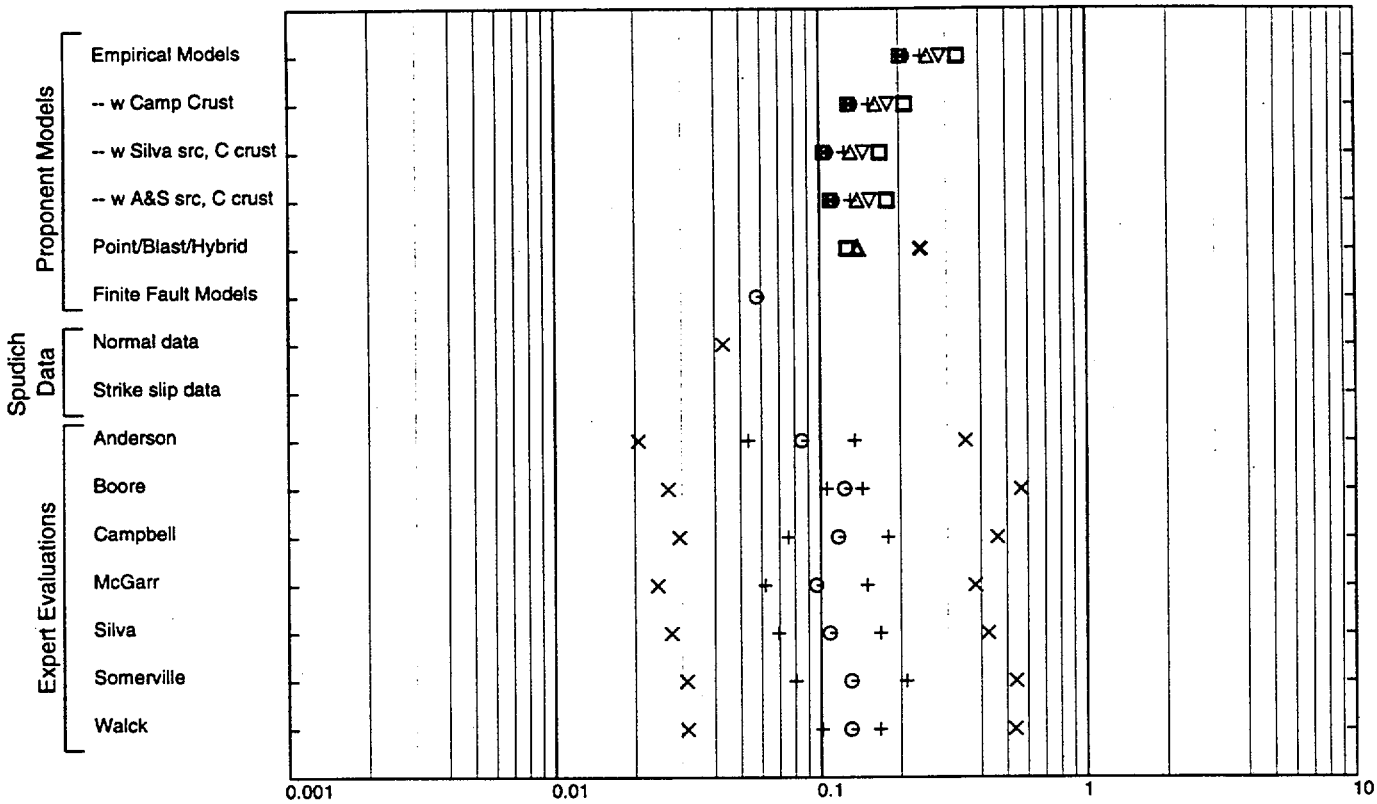
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

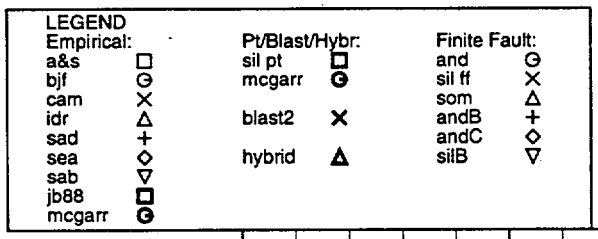
Spectral Acceleration (g)



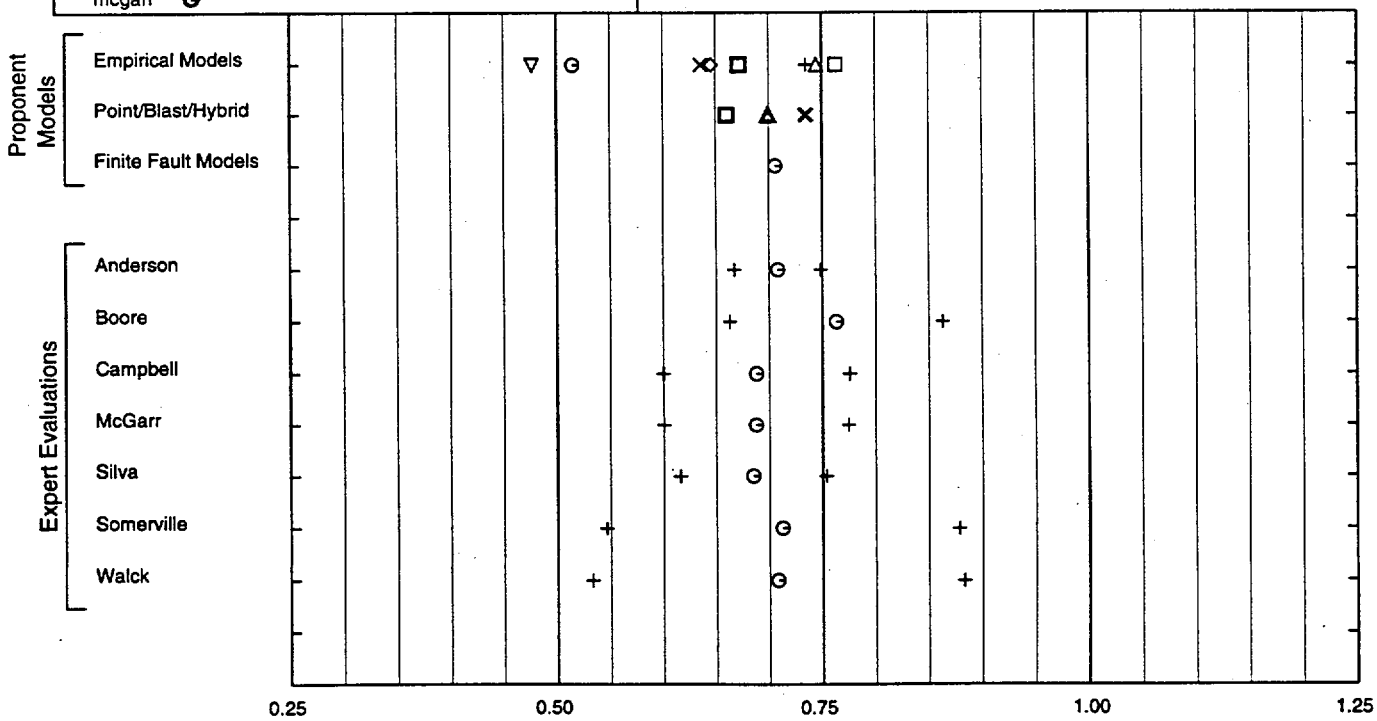
Aleatory Sigma (LN units) w/ Comp Var.

case 17, M= 5.0, deep, xd= 1 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



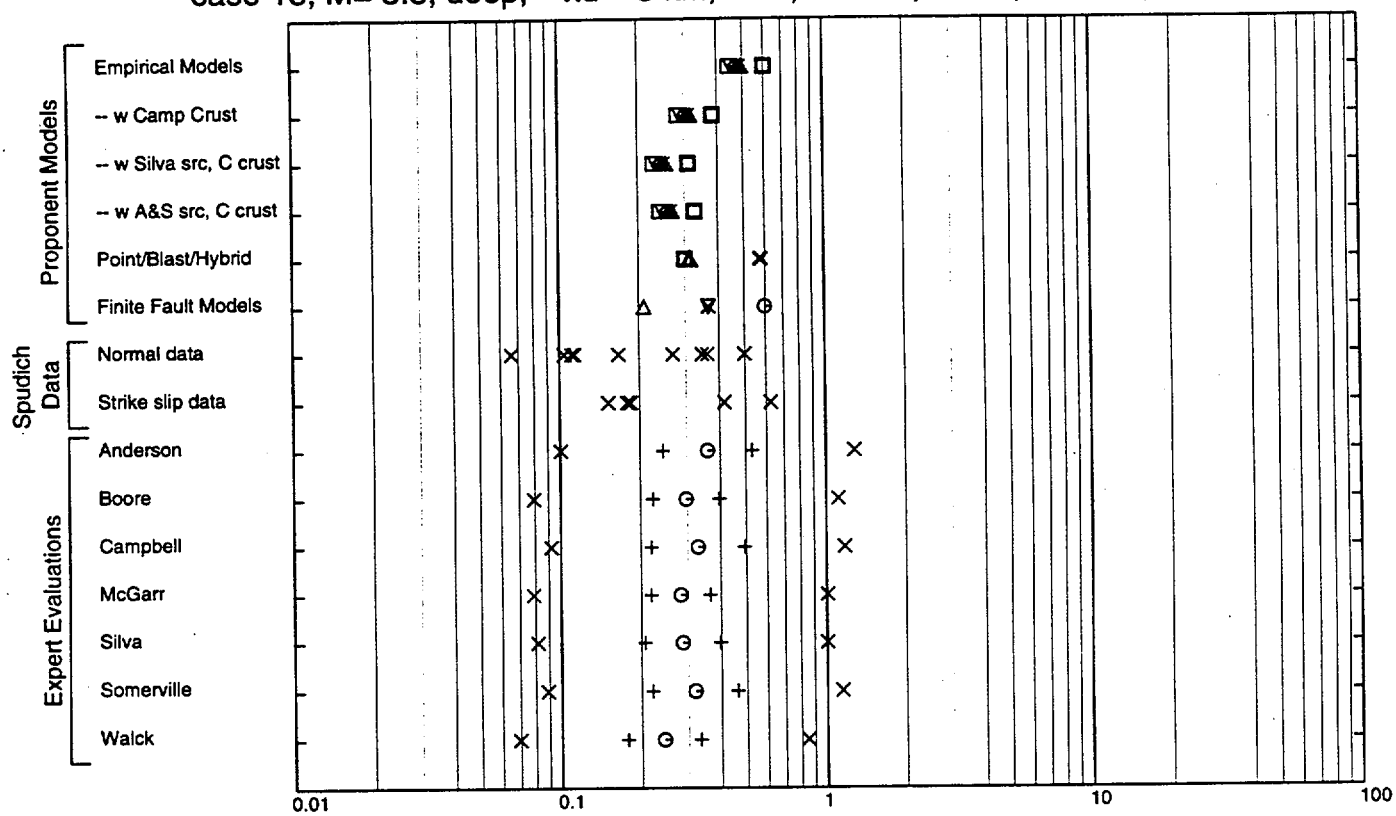


Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

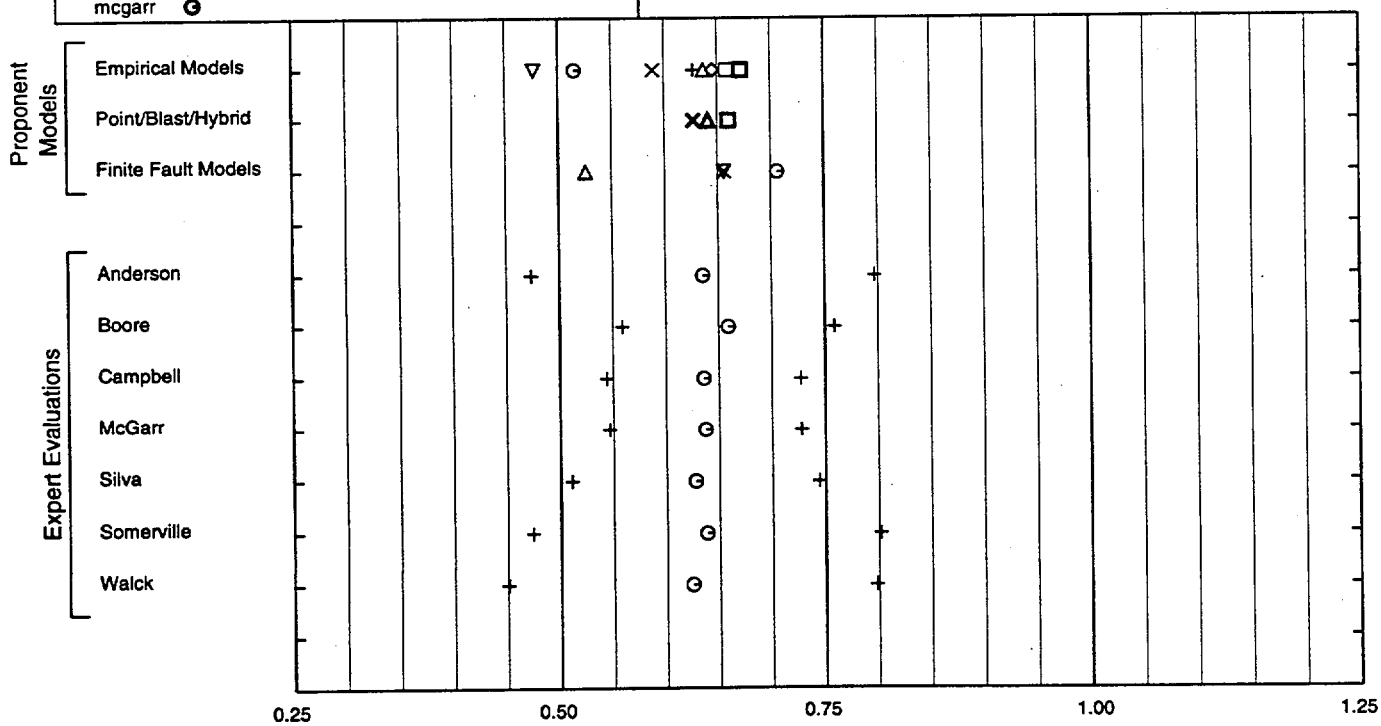
case 18, M= 5.8, deep, xd= 5 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

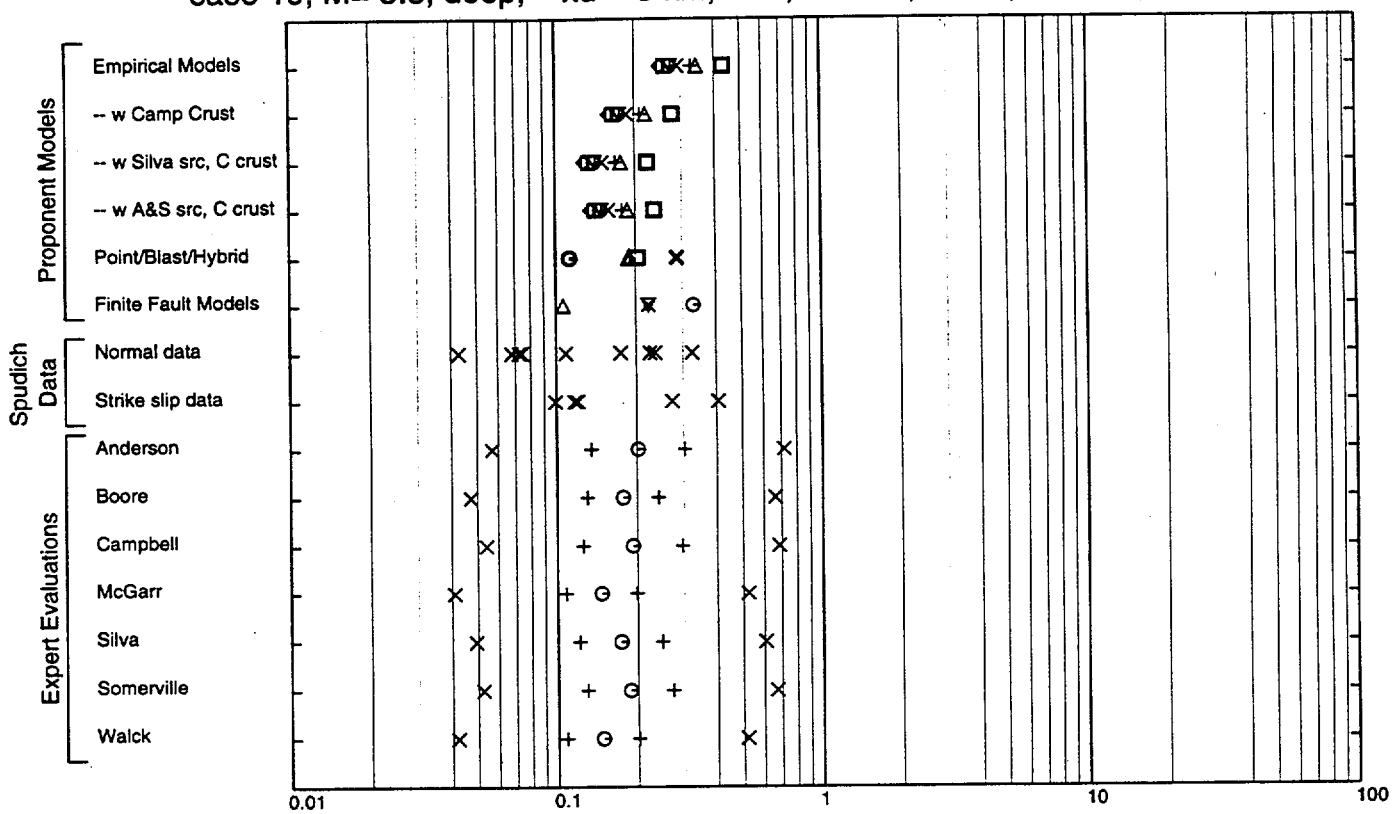
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

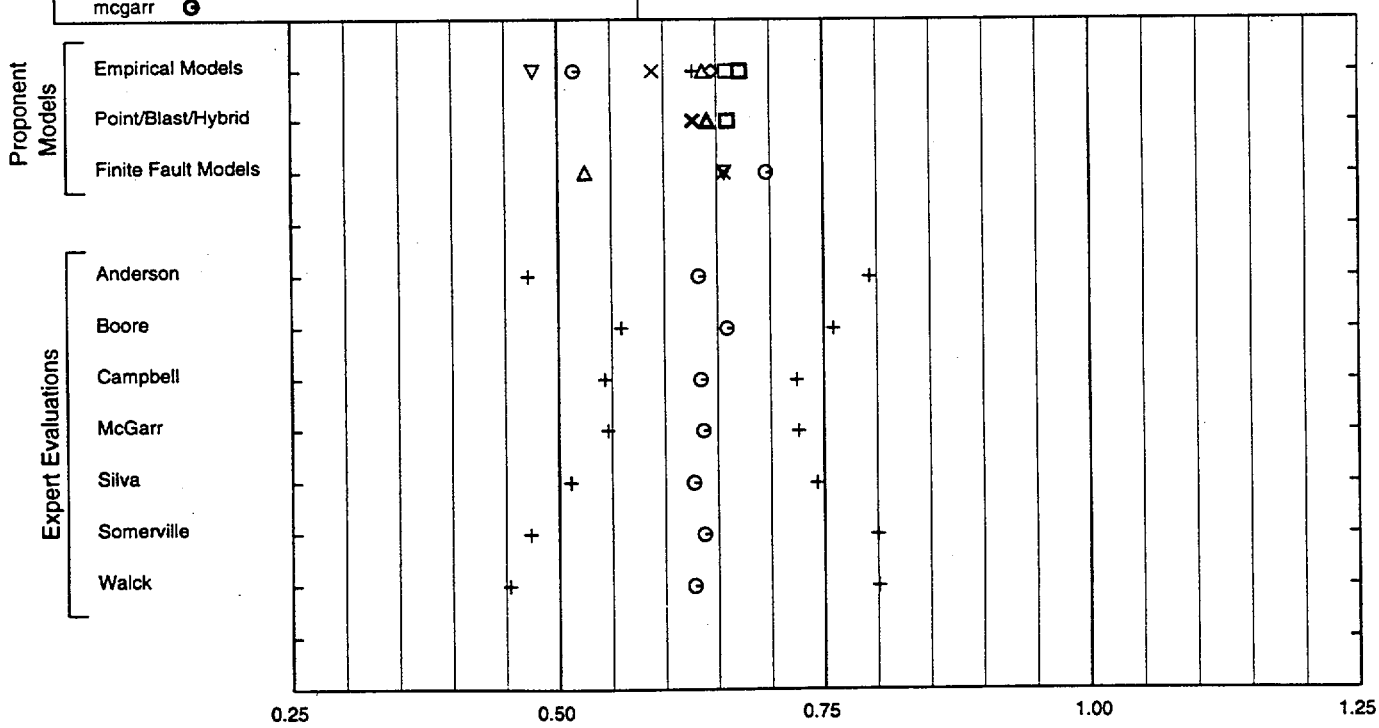
case 19, M= 5.8, deep, xd= -5 km, FW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

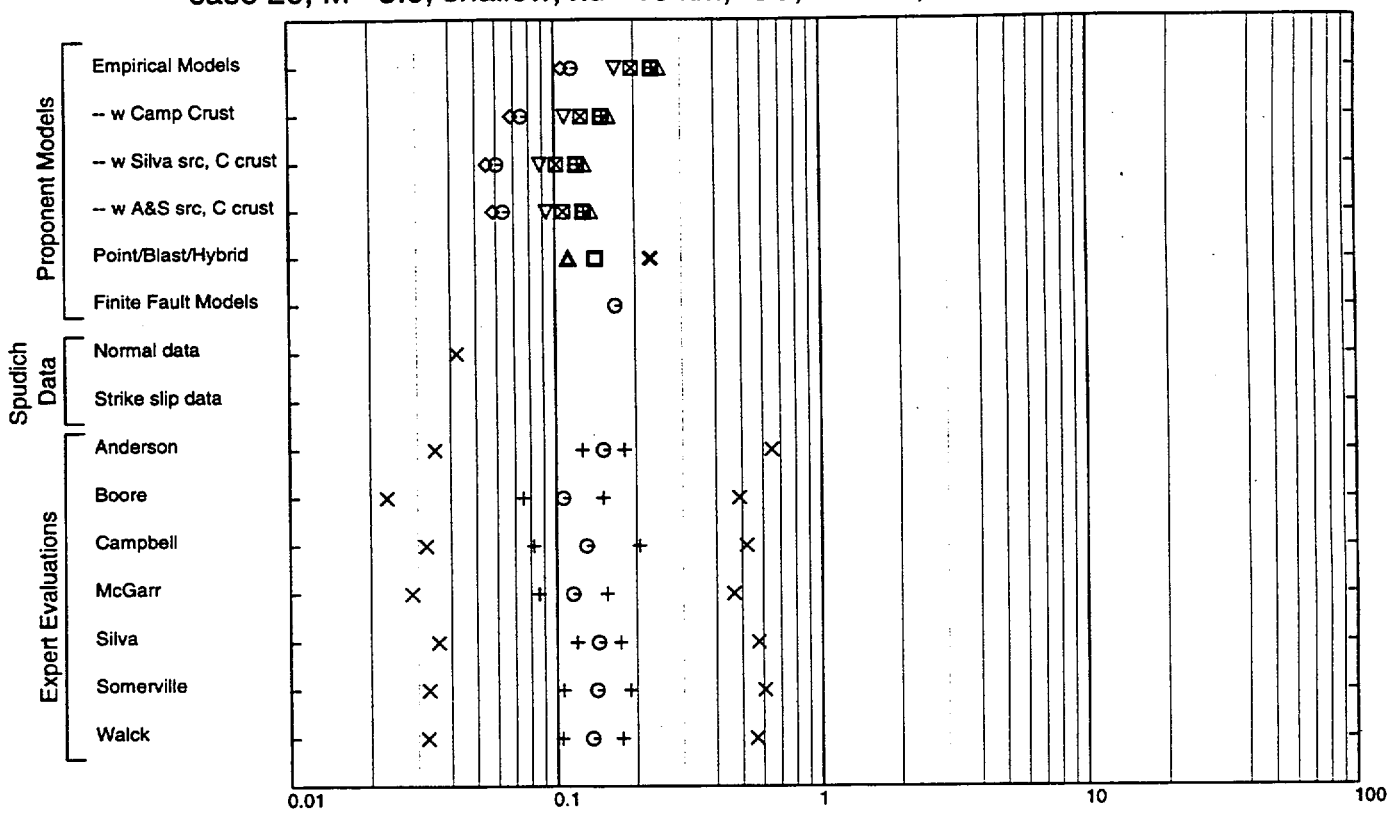
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

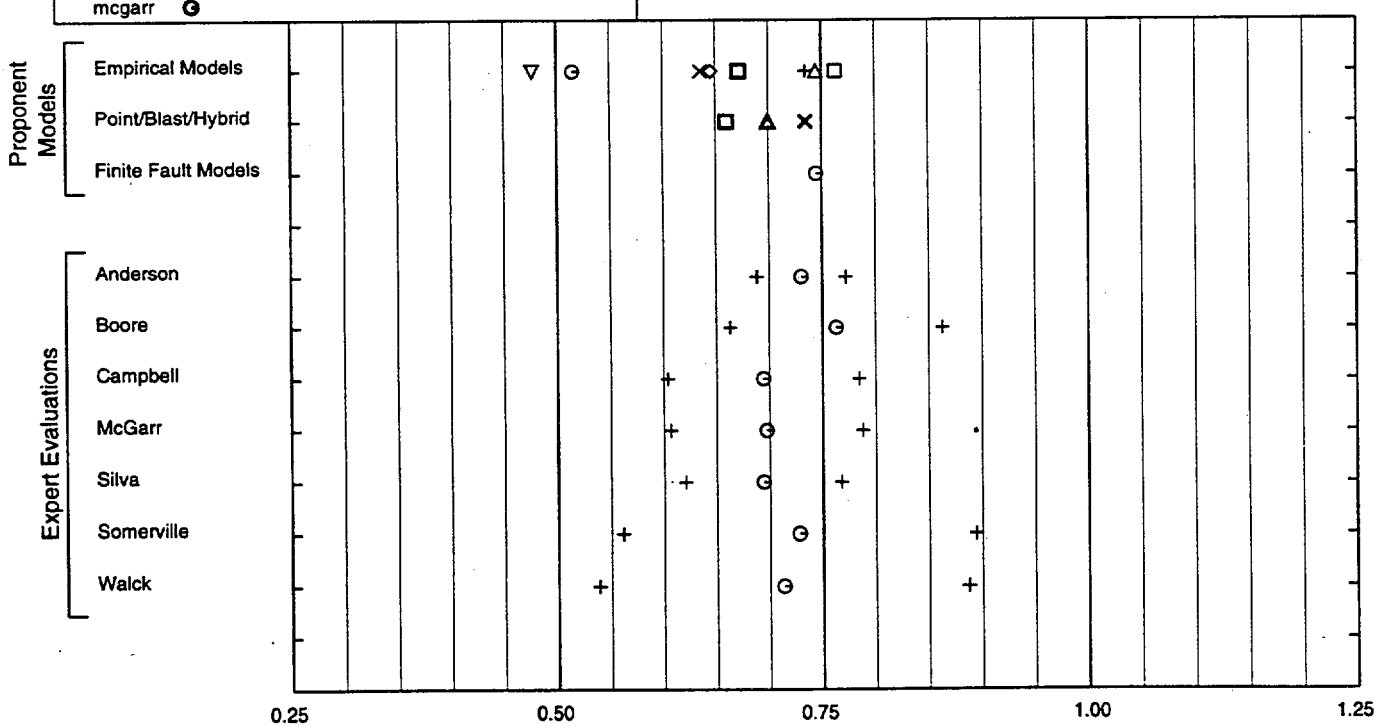
case 20, M= 5.0, shallow, xd= 10 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

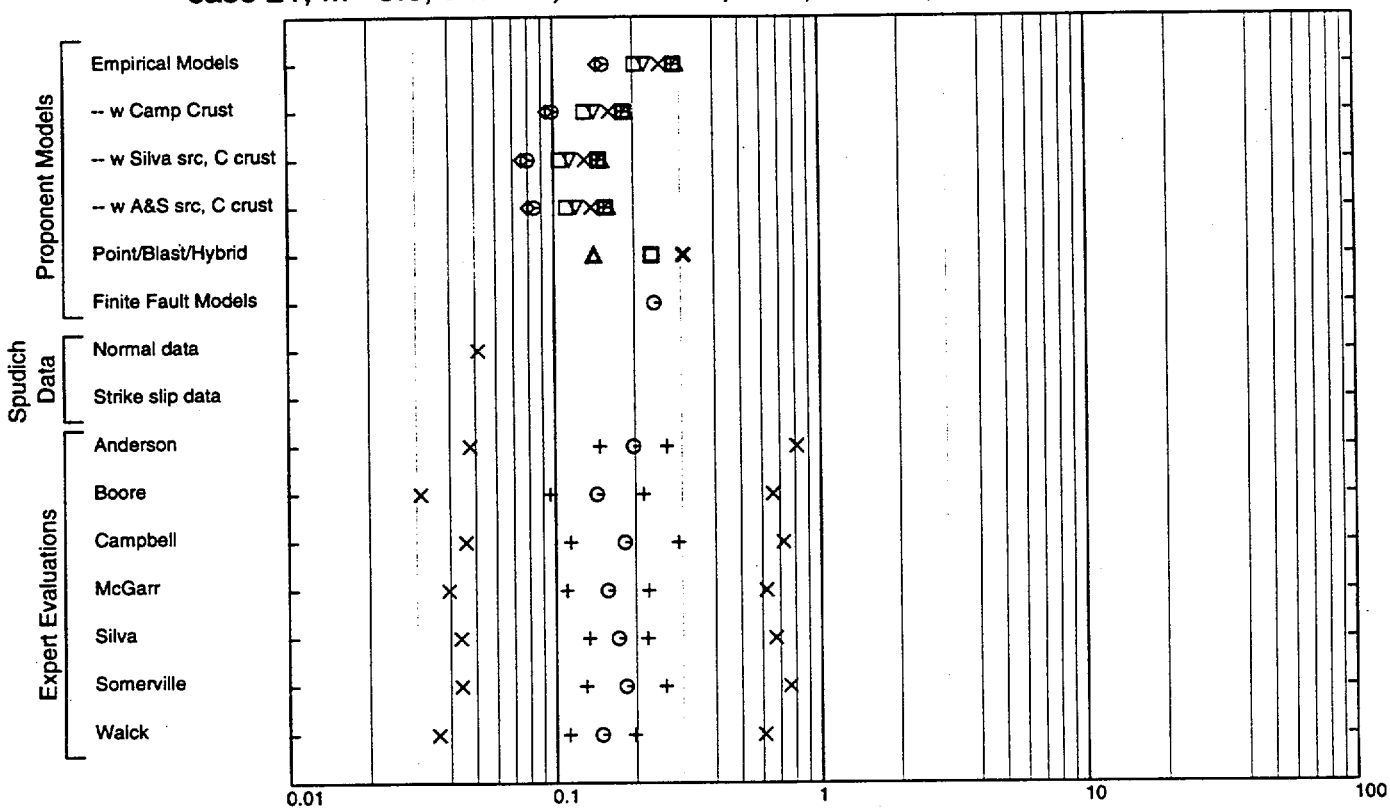
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

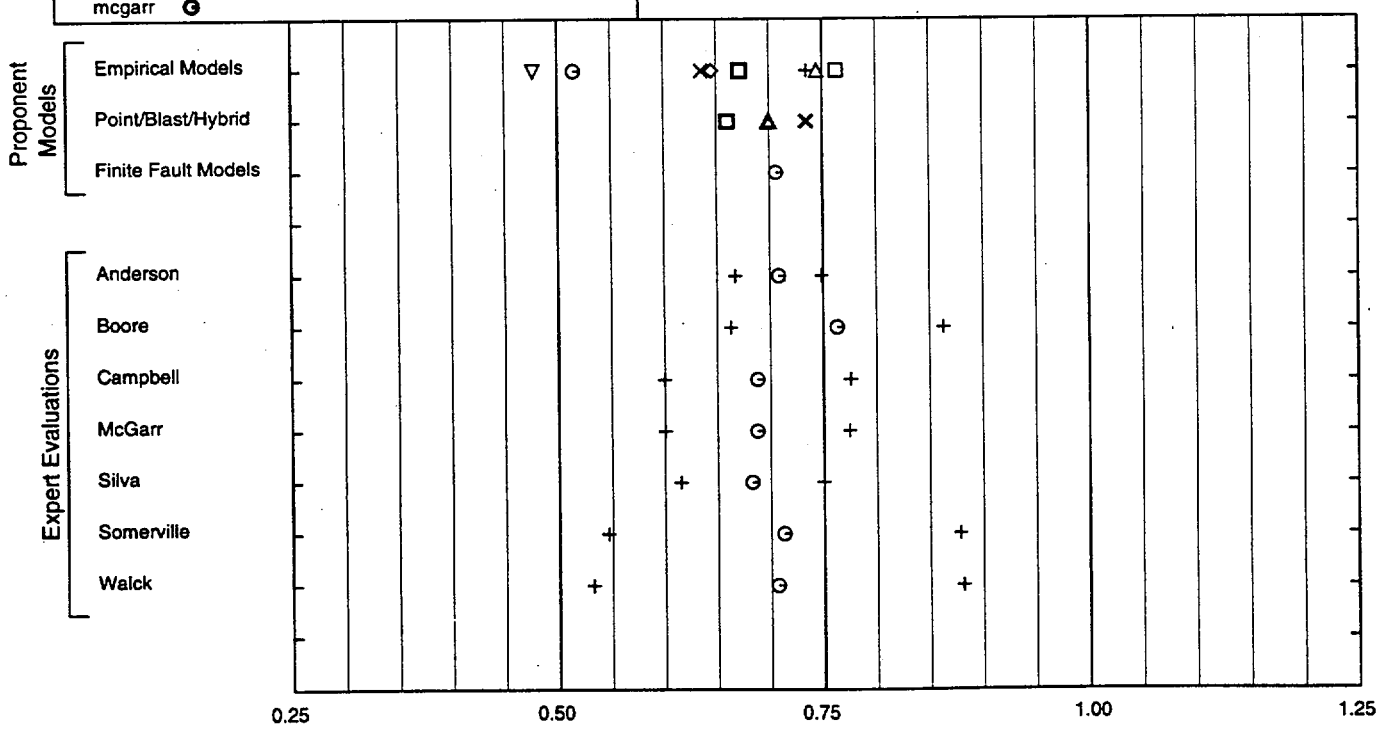
case 21, M= 5.0, shallow, xd= 10 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

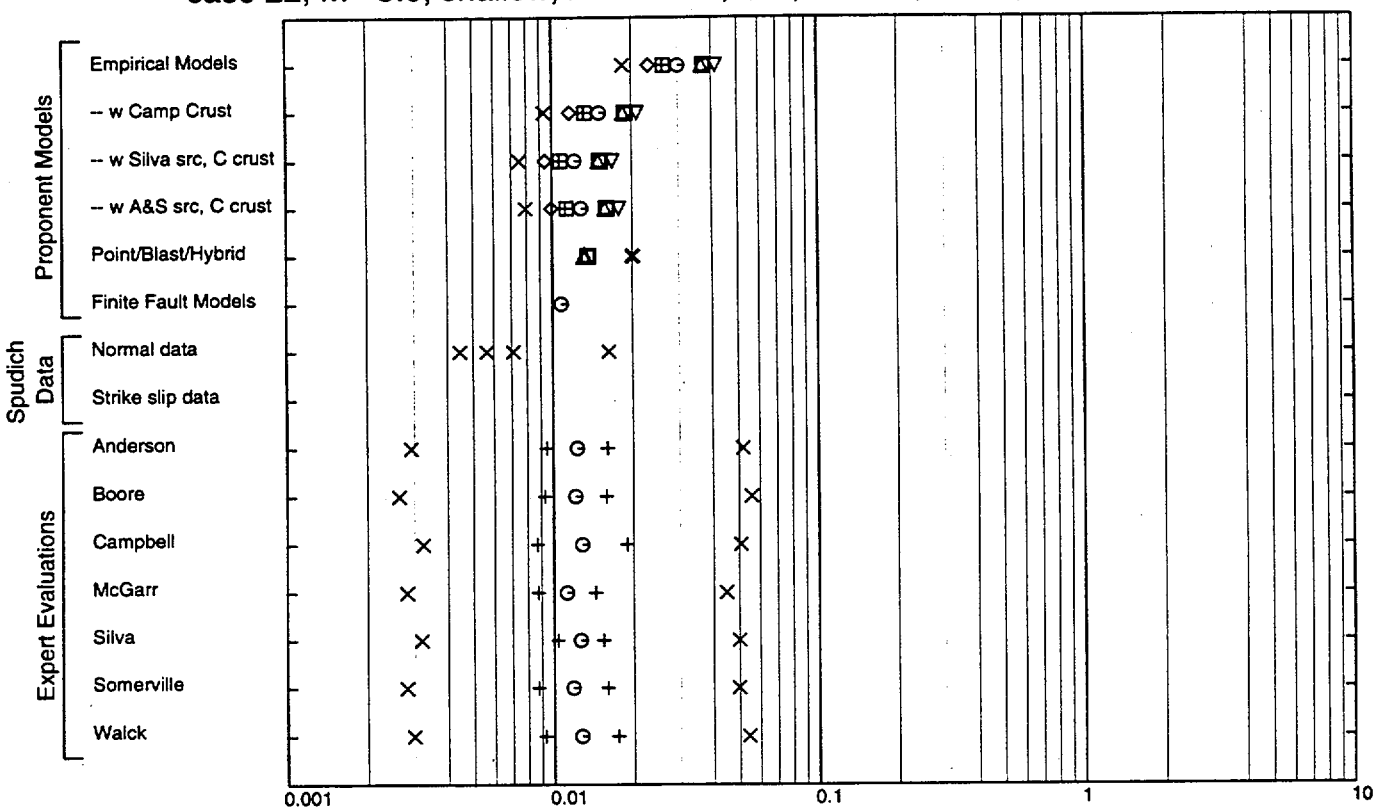
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

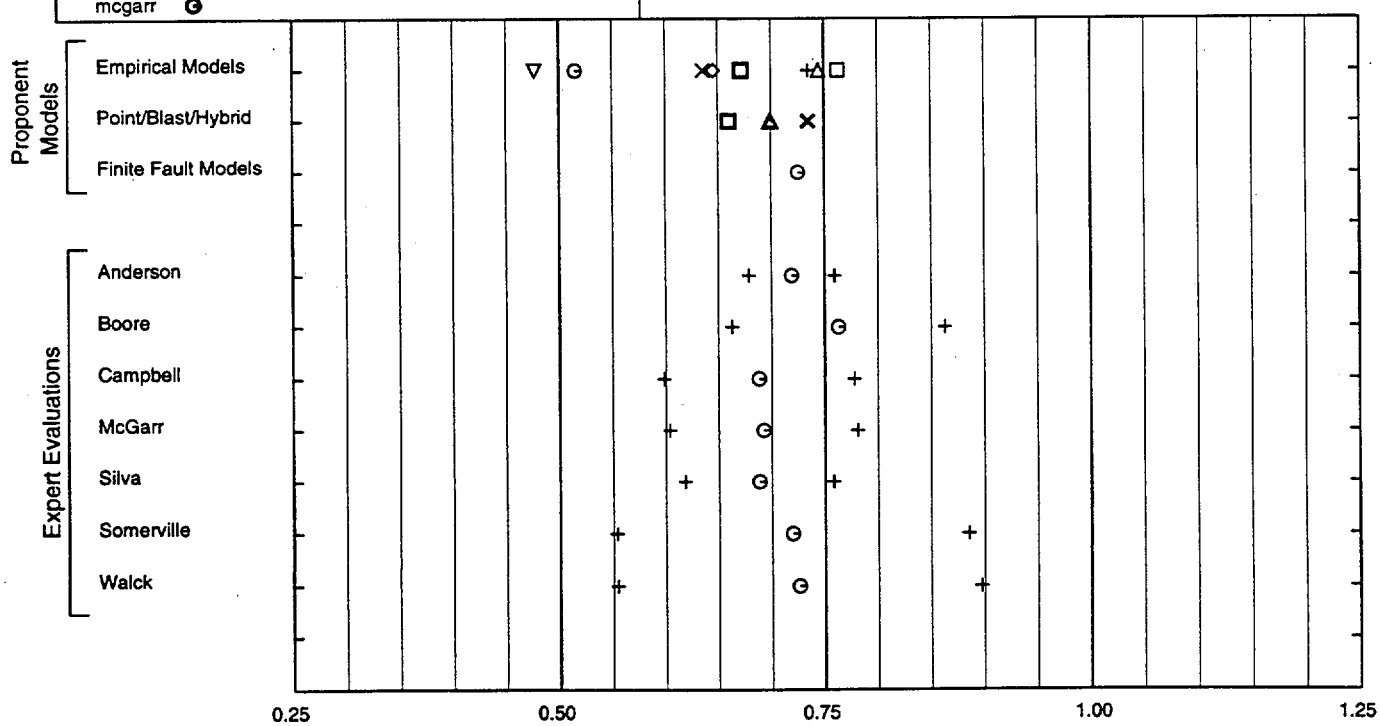
case 22, M= 5.0, shallow, xd= 50 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

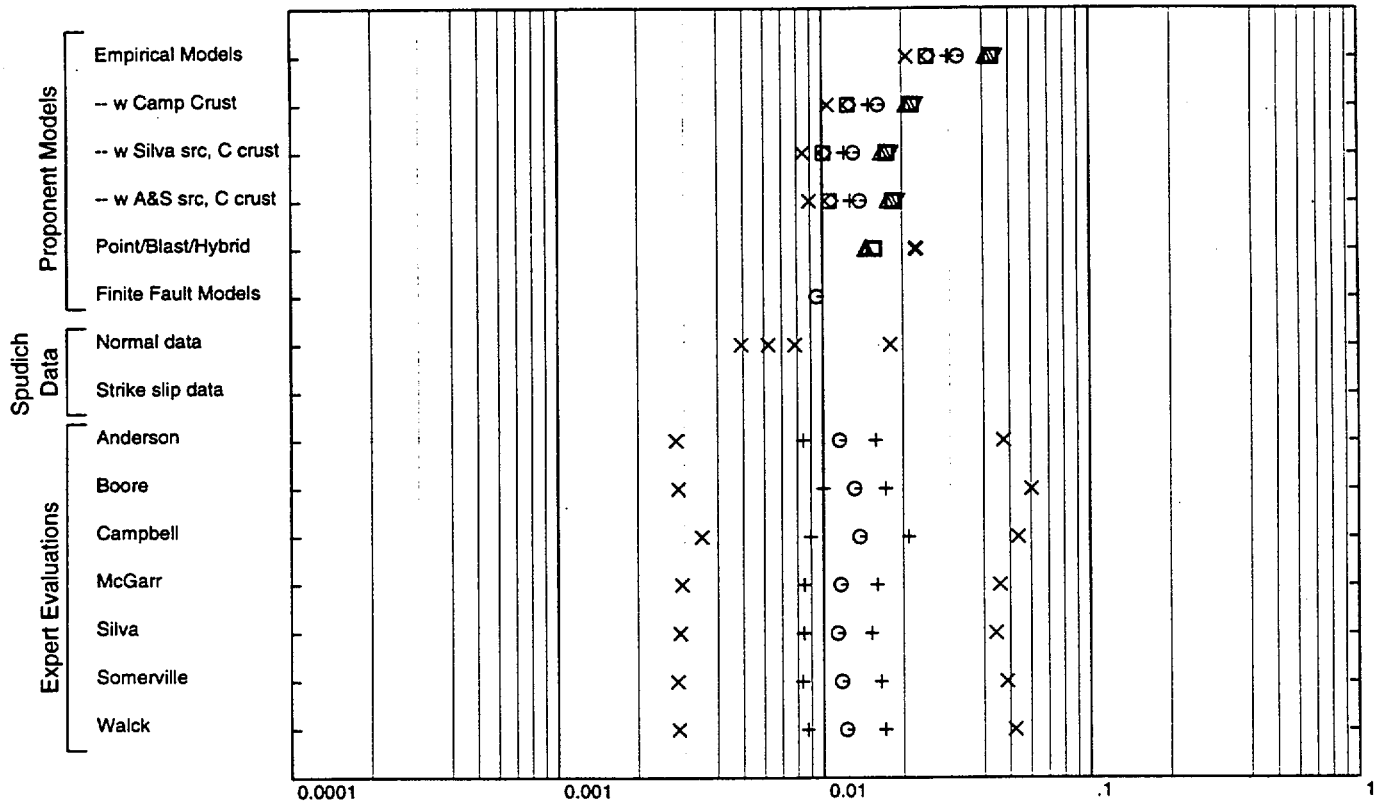
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

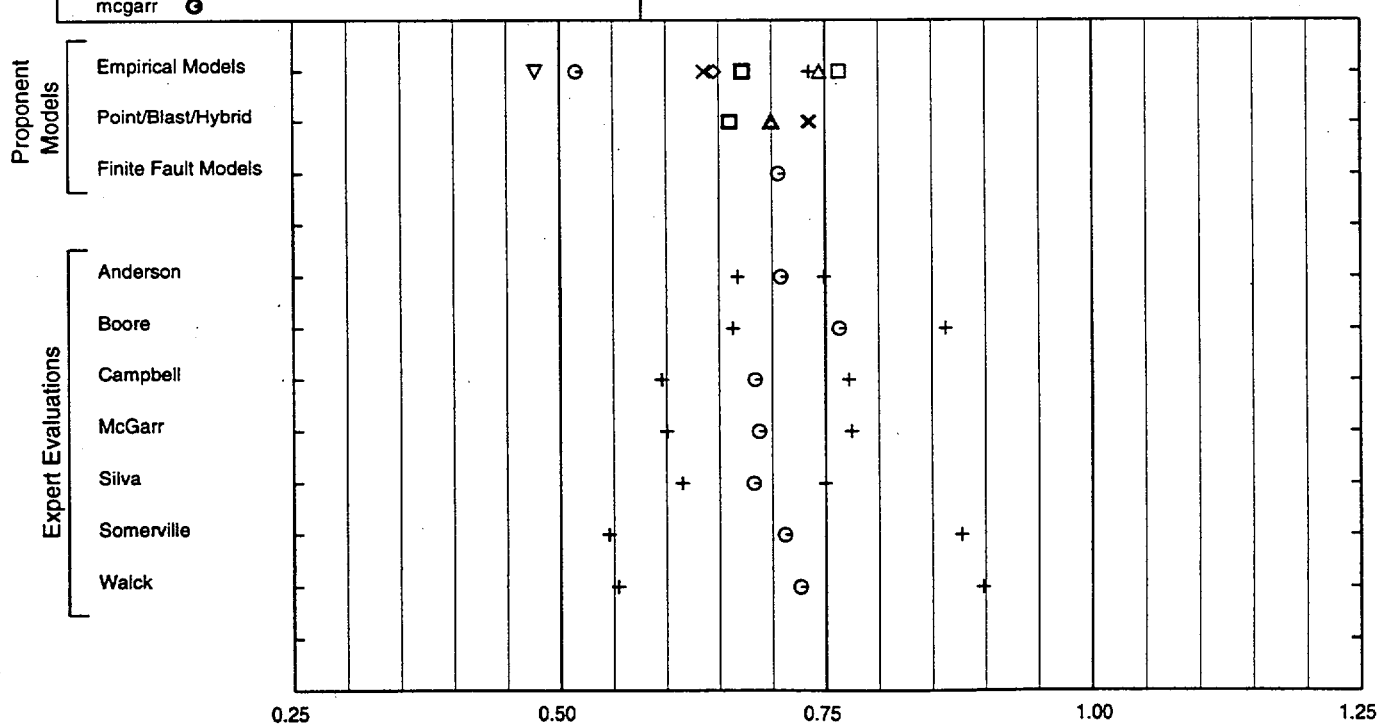
case 23, M= 5.0, shallow, xd= 50 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

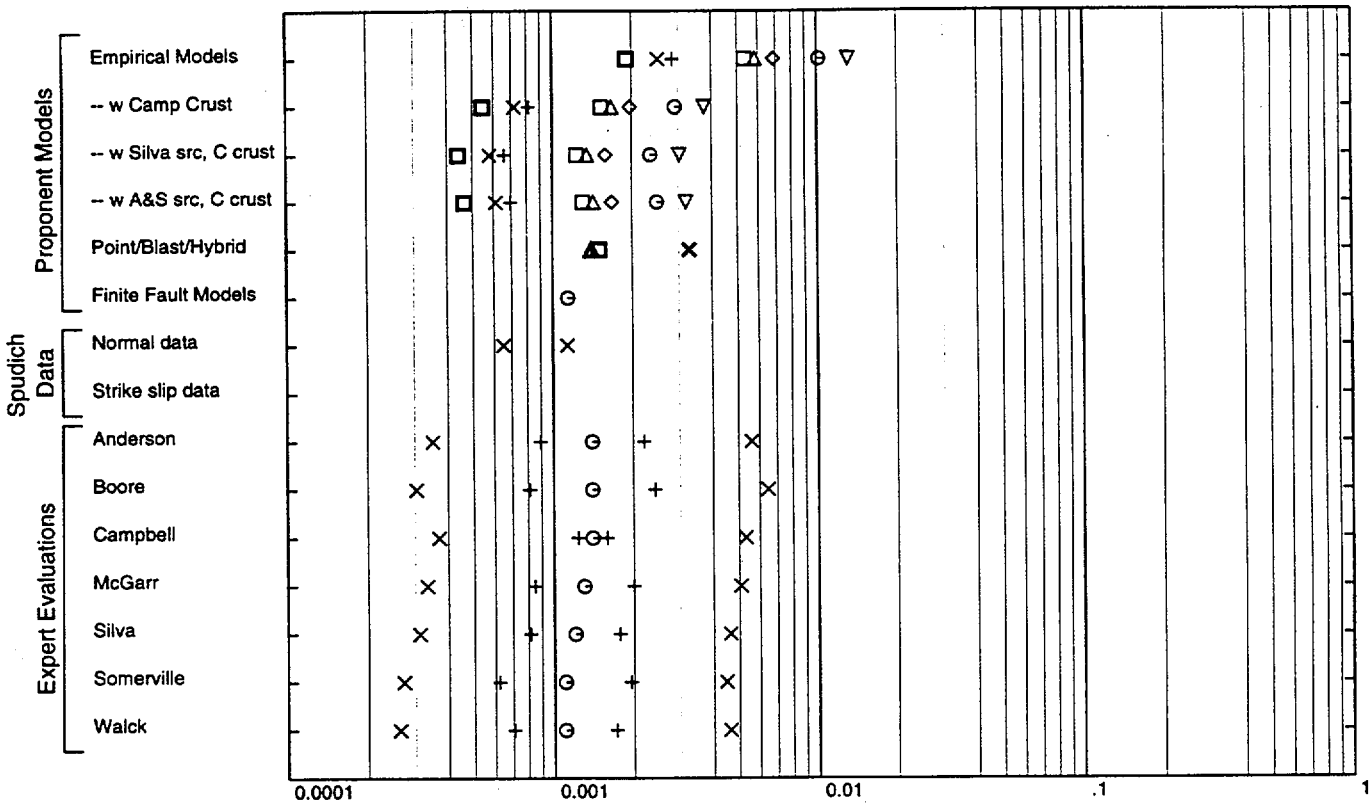
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

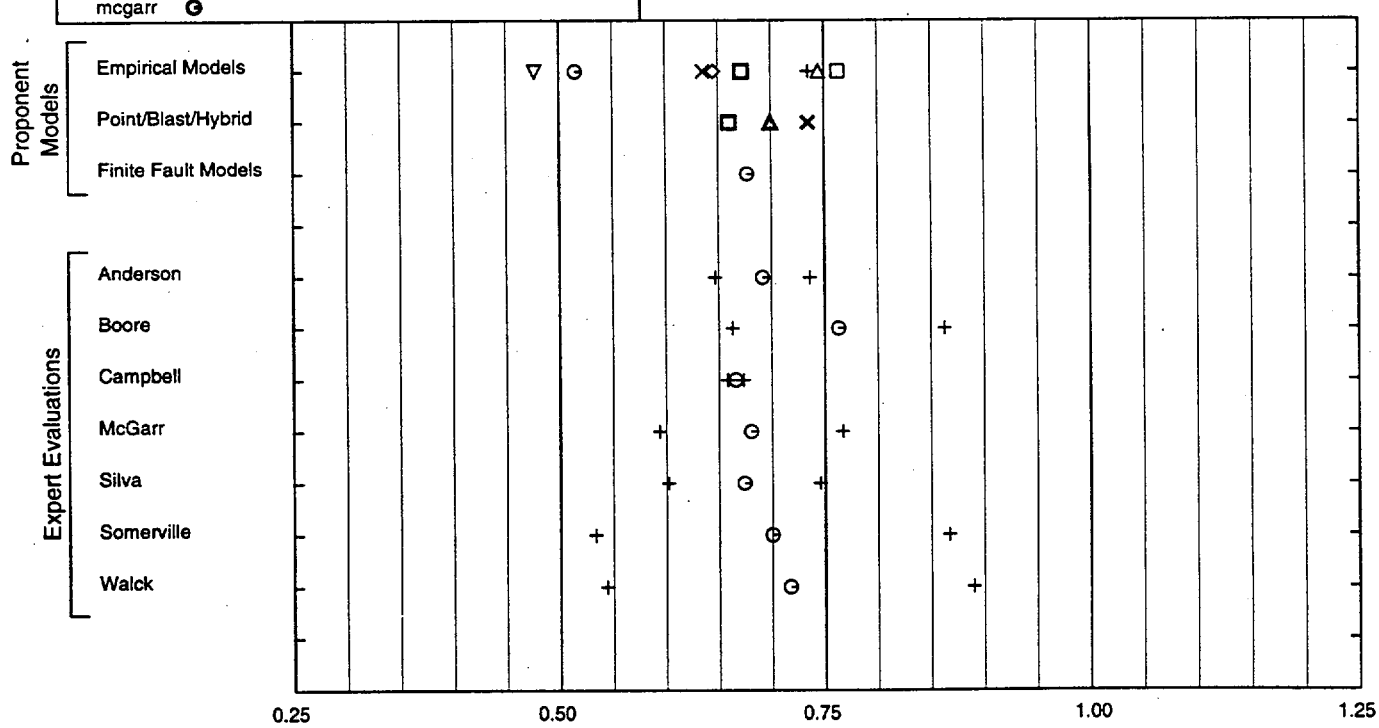
case 24, M= 5.0, shallow, xd=160 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

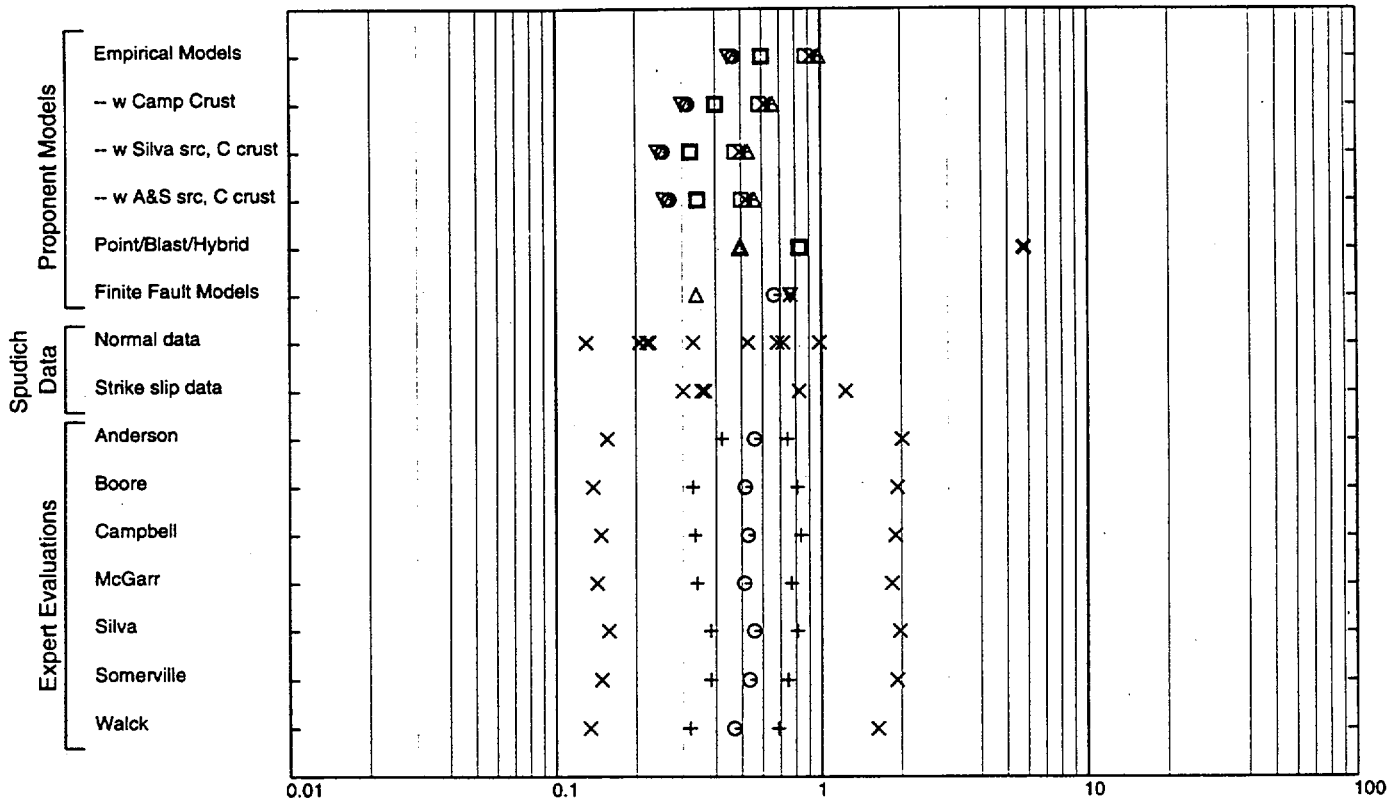
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

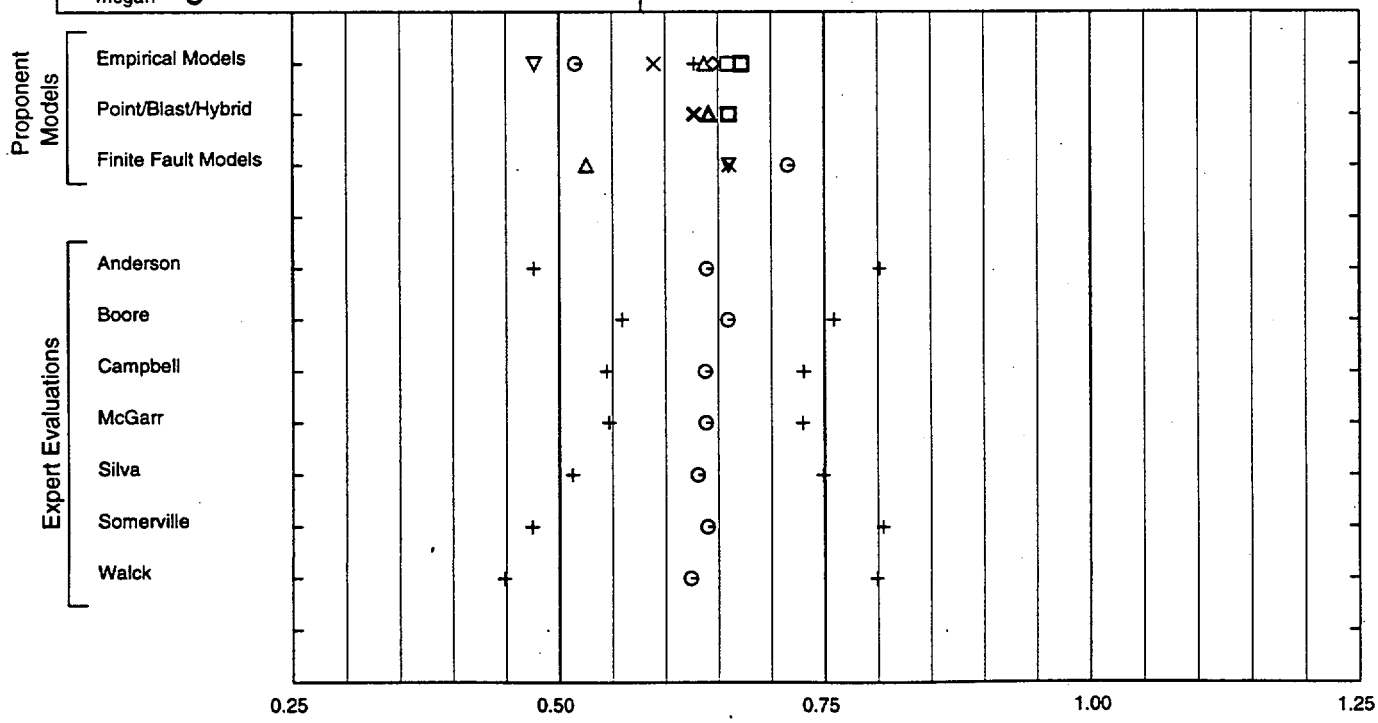
case 25, M= 5.8, shallow, xd= 1 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



LEGEND

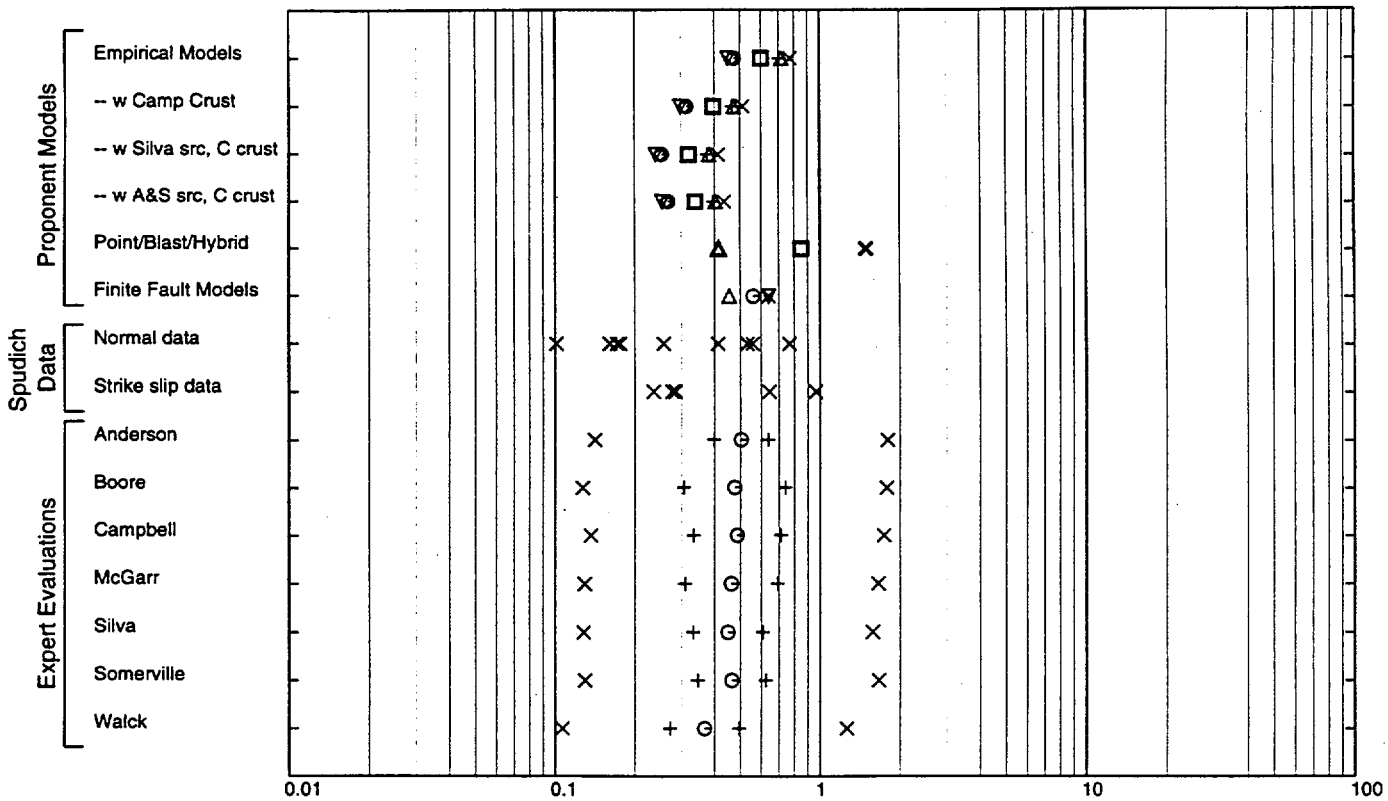
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

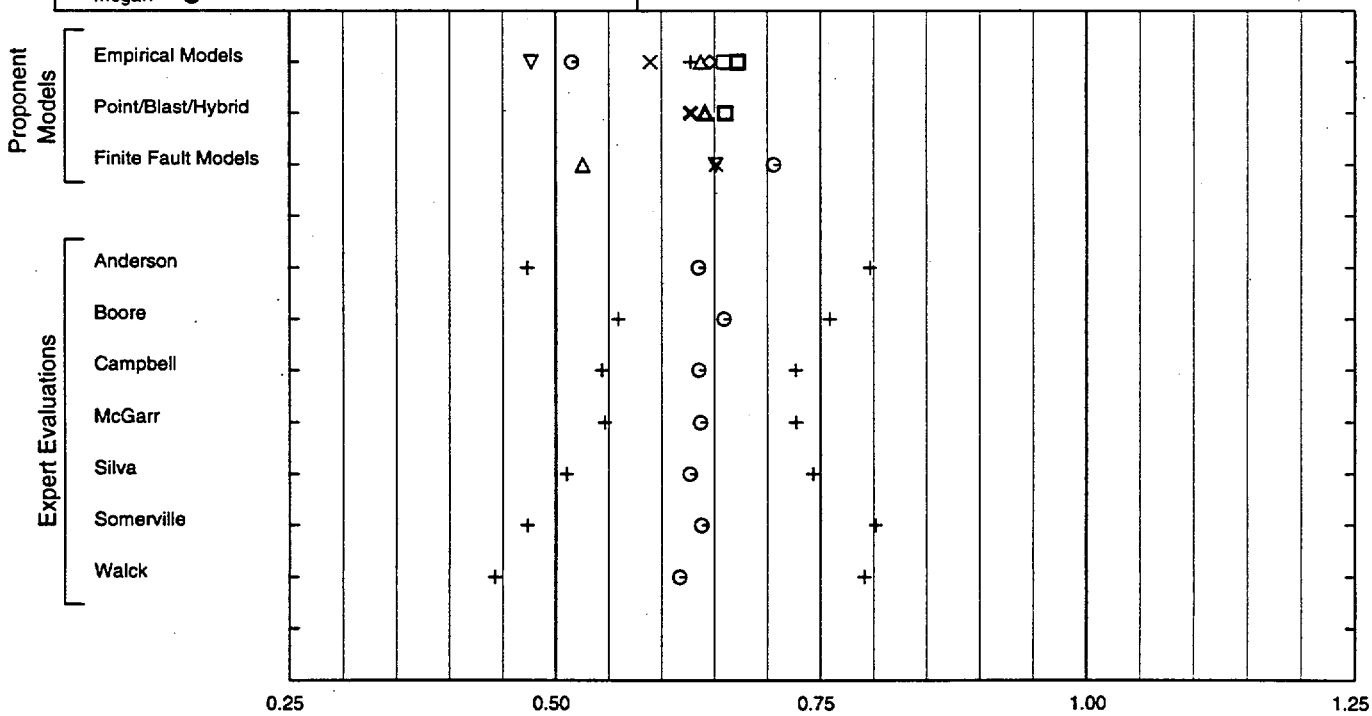
case 26, M= 5.8, shallow, xd= 5 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



LEGEND

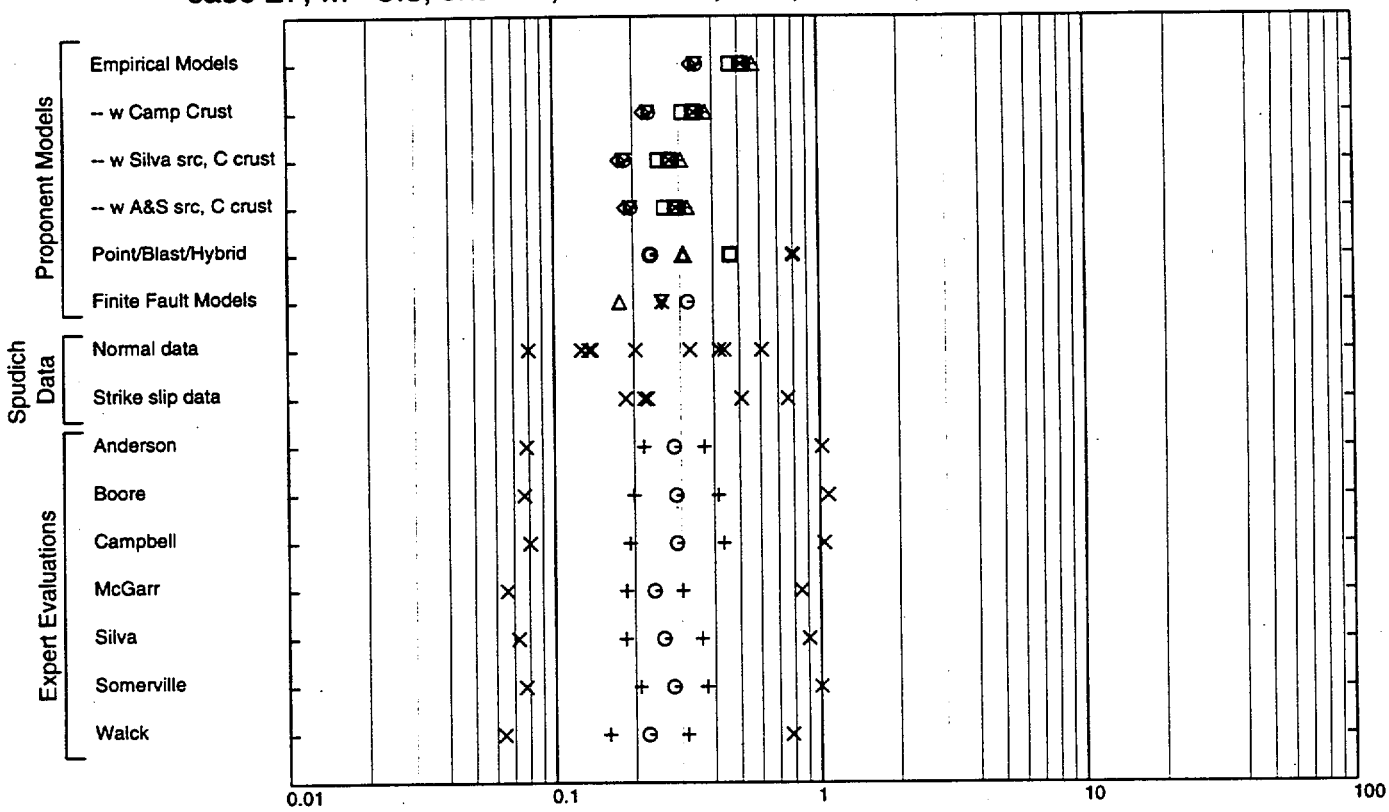
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

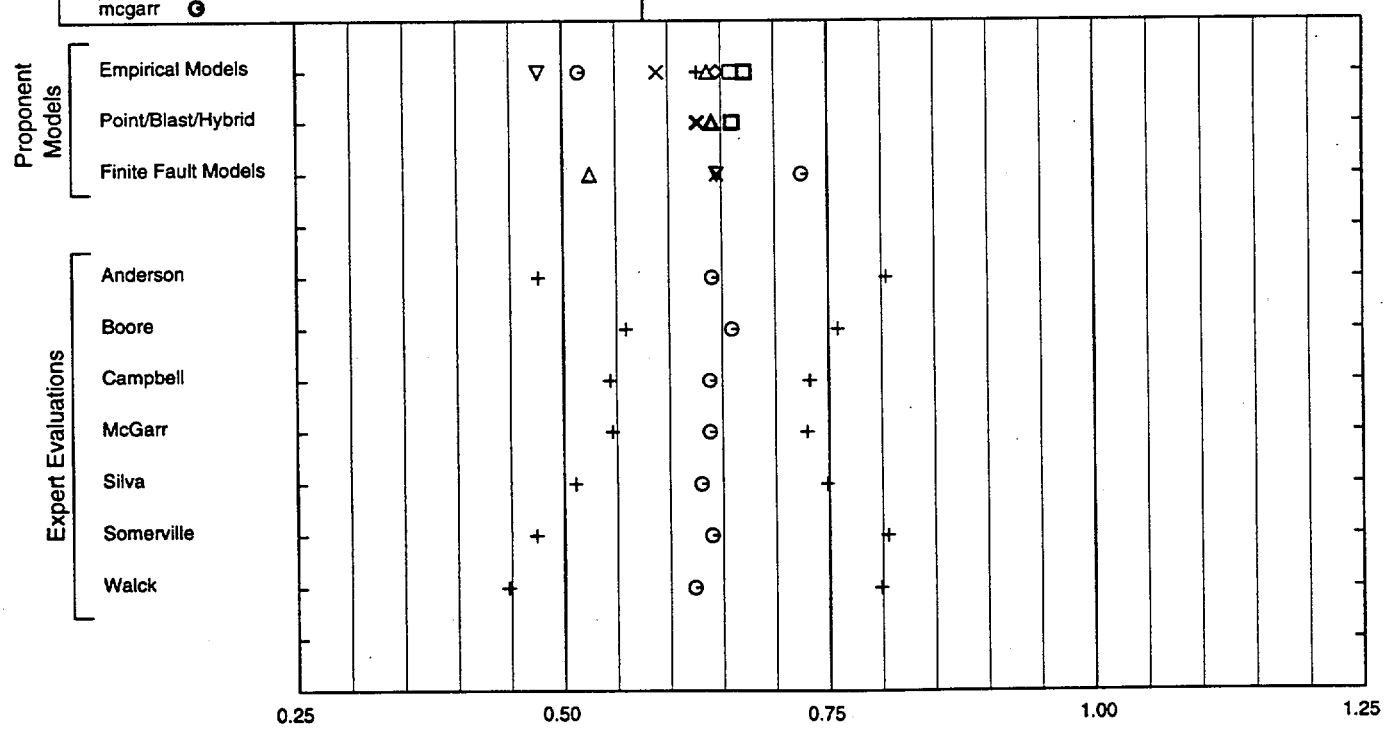
case 27, M= 5.8, shallow, xd= -5 km, FW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

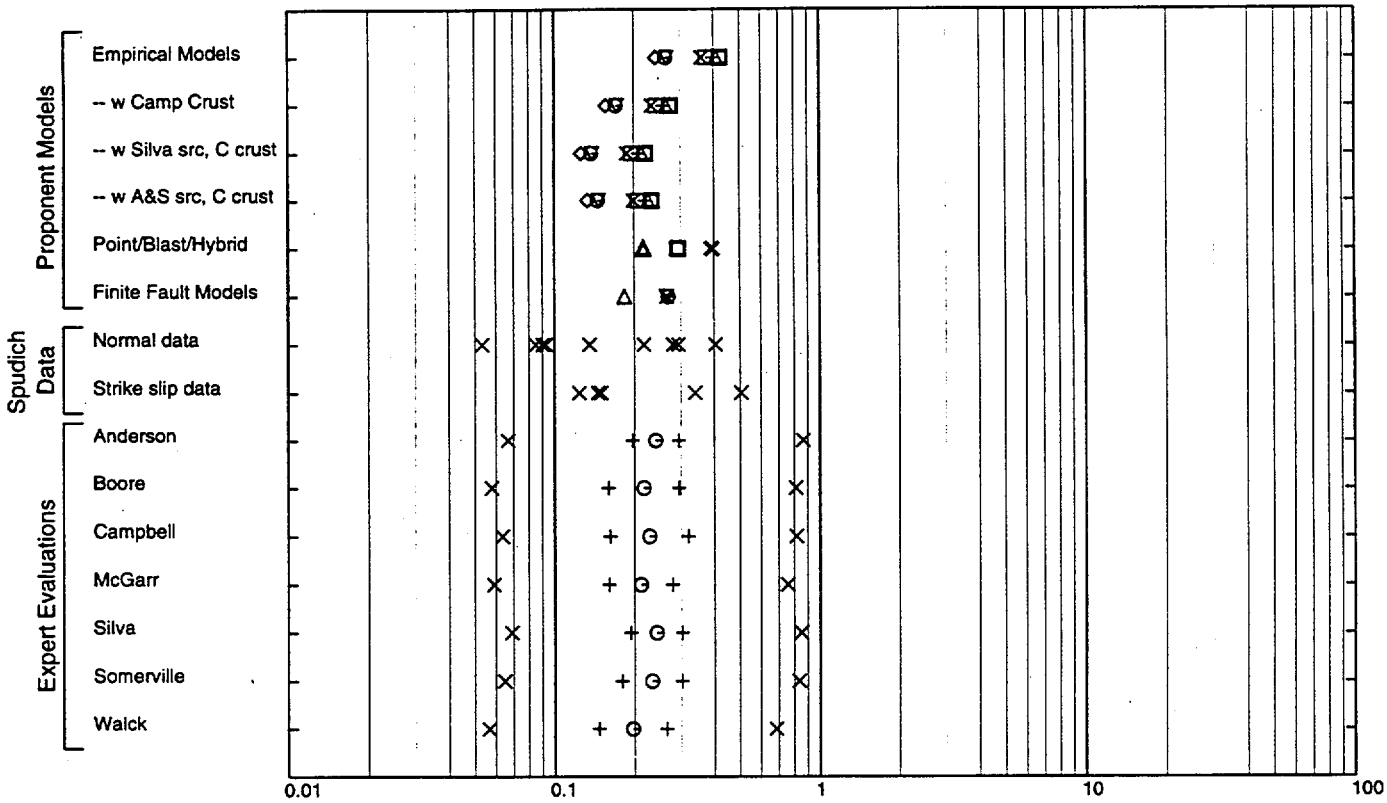
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

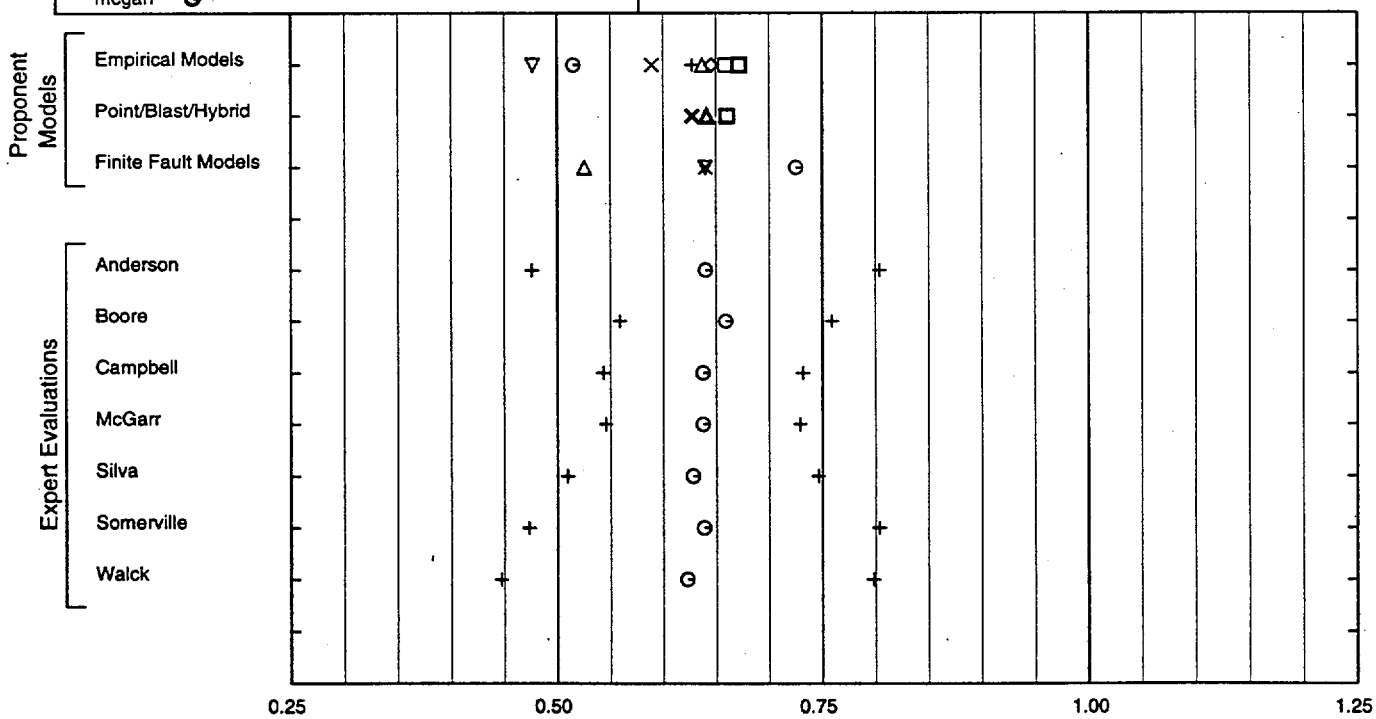
case 28, M= 5.8, shallow, xd= 10 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

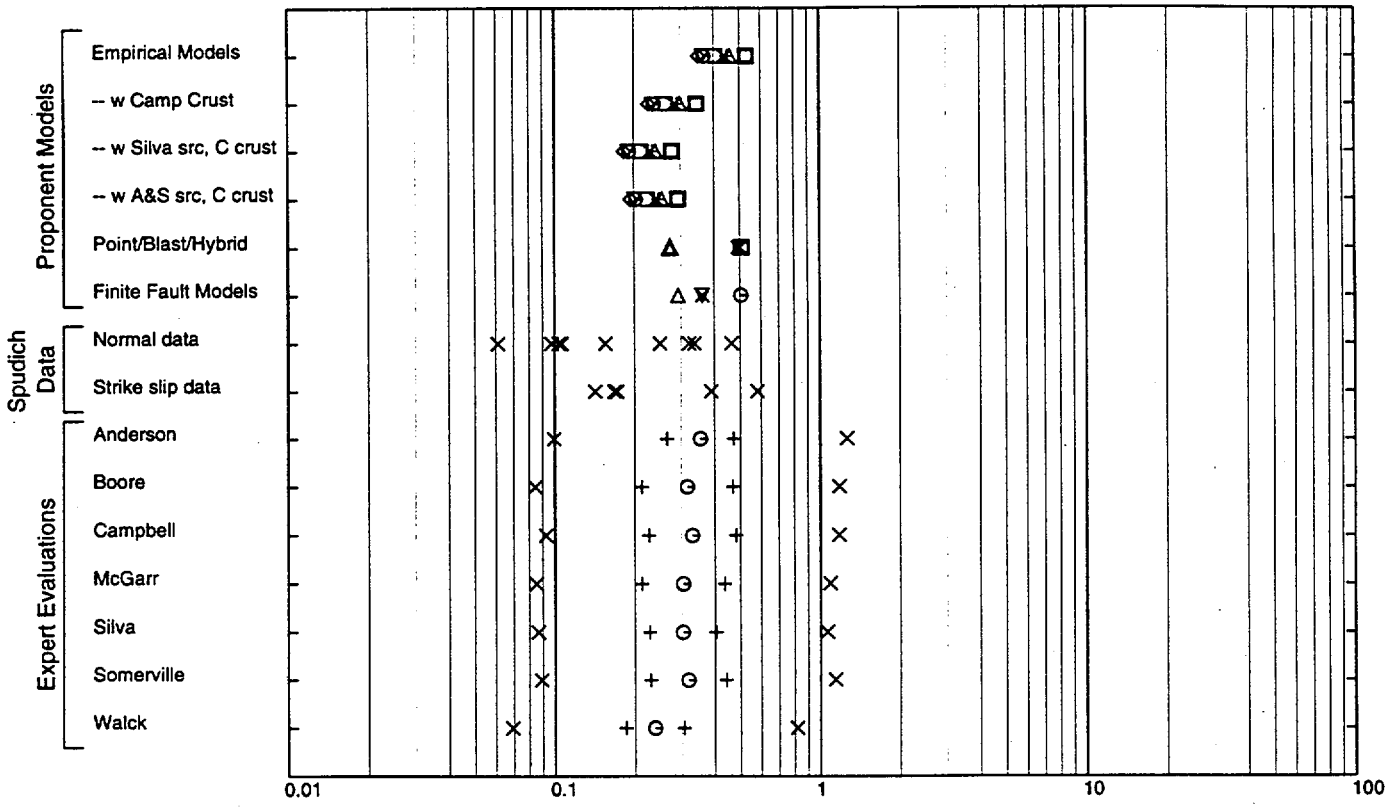
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

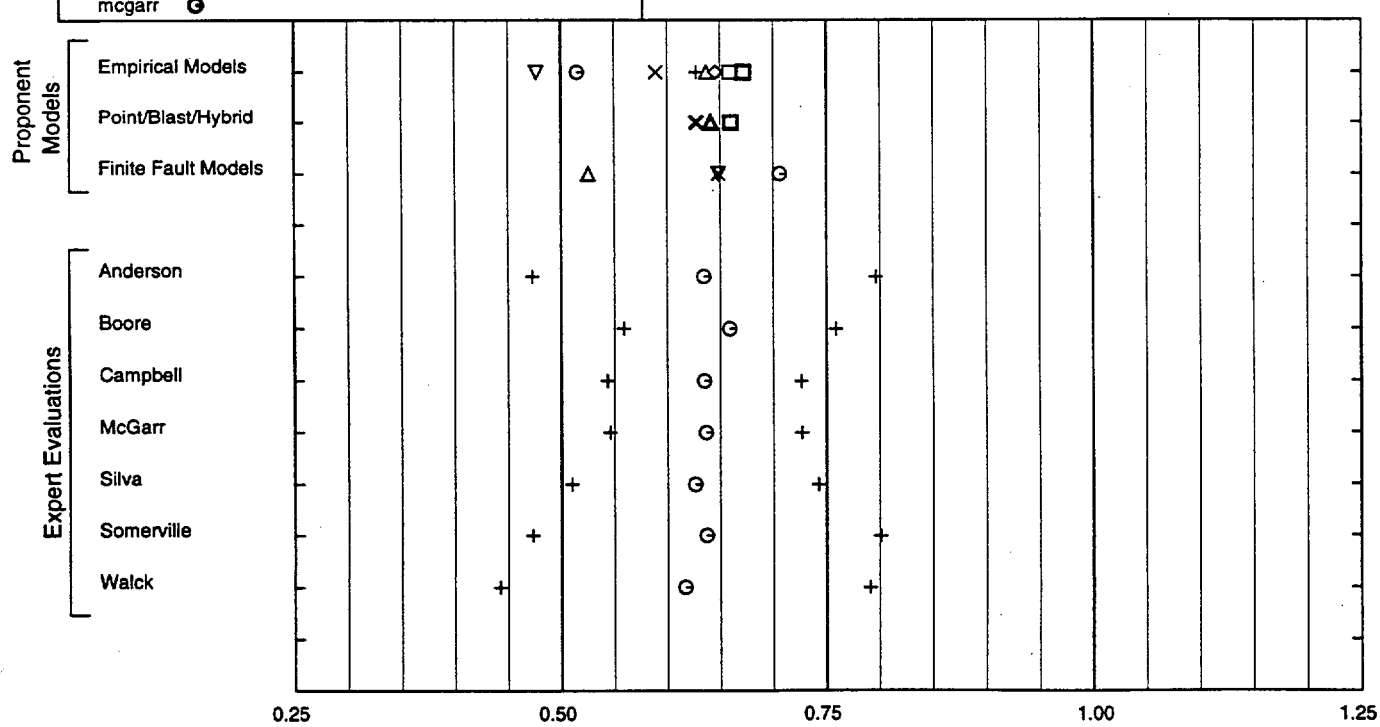
case 29, M= 5.8, shallow, xd= 10 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

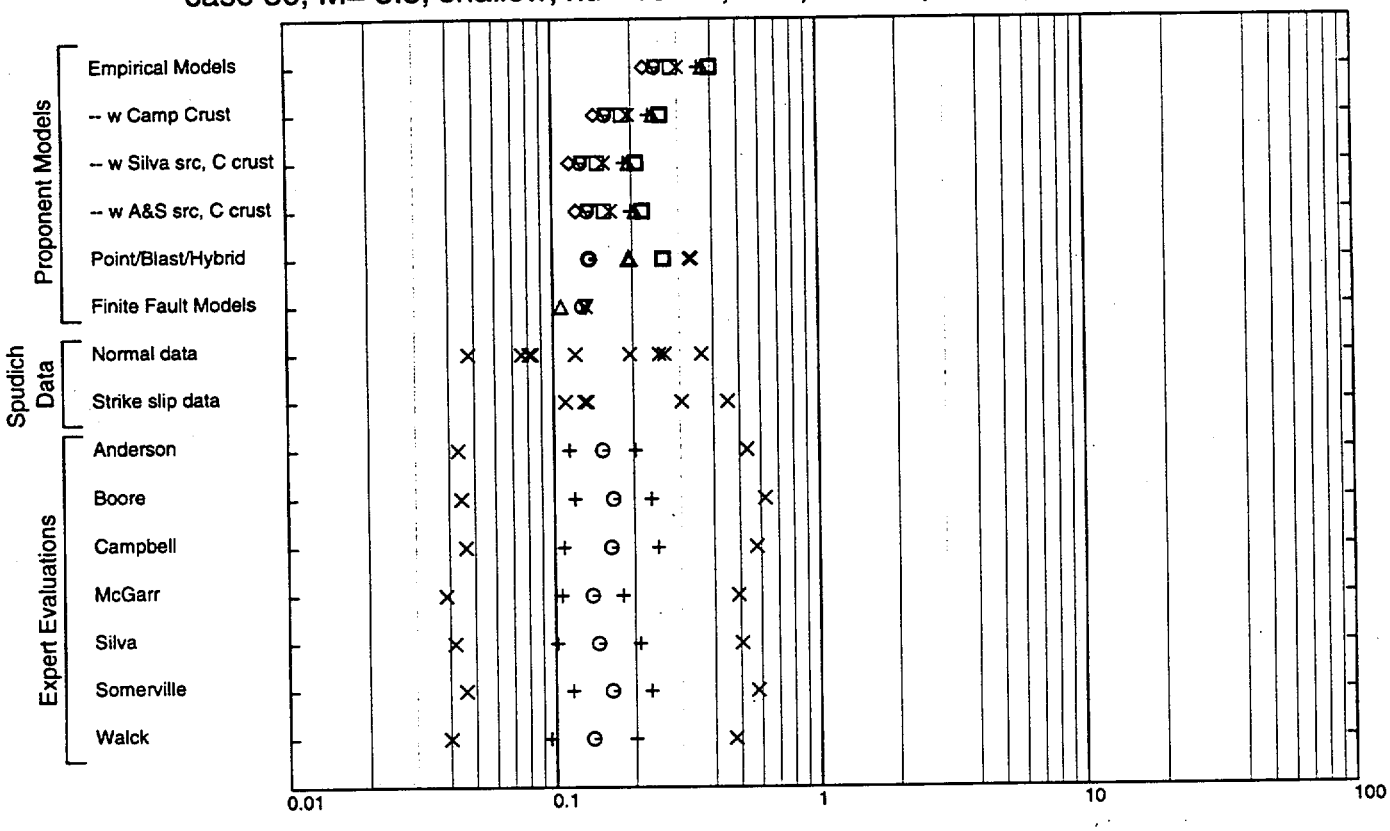
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

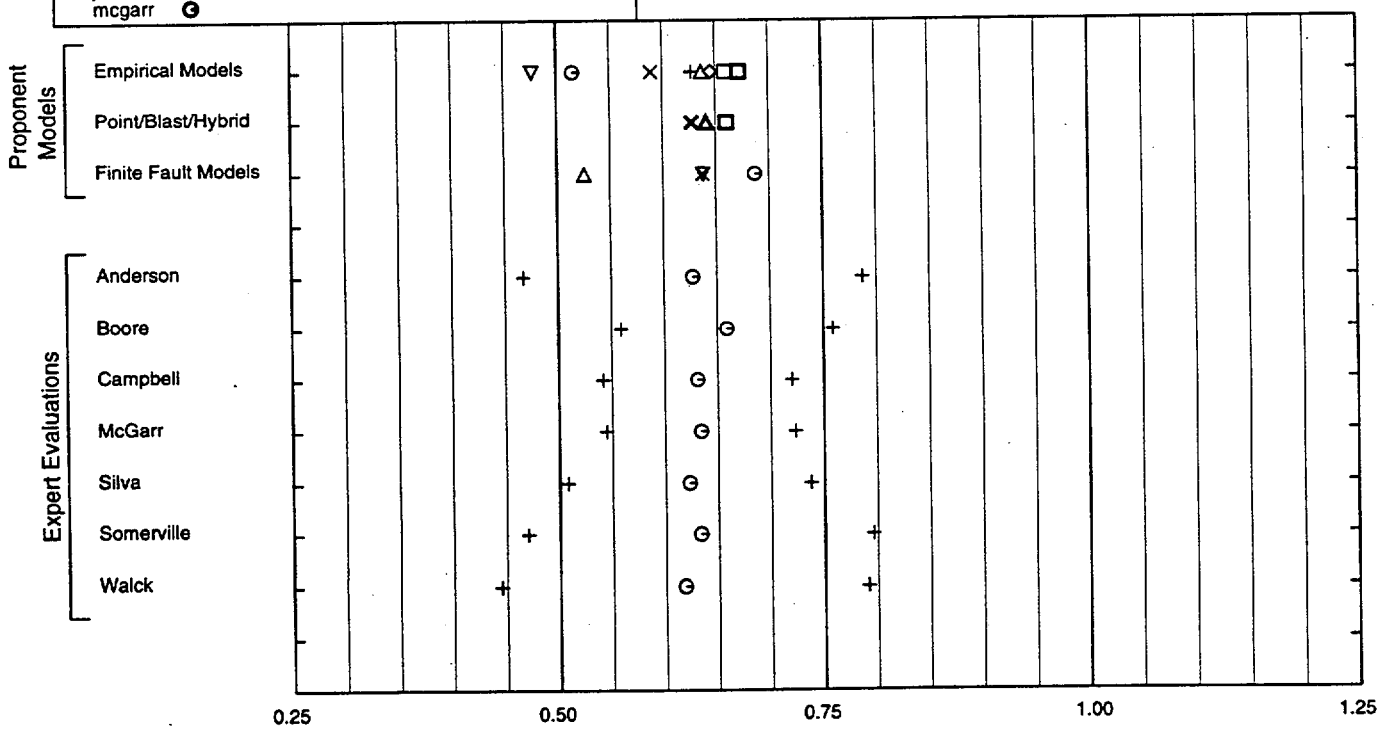
case 30, M= 5.8, shallow, xd=-10 km, FW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

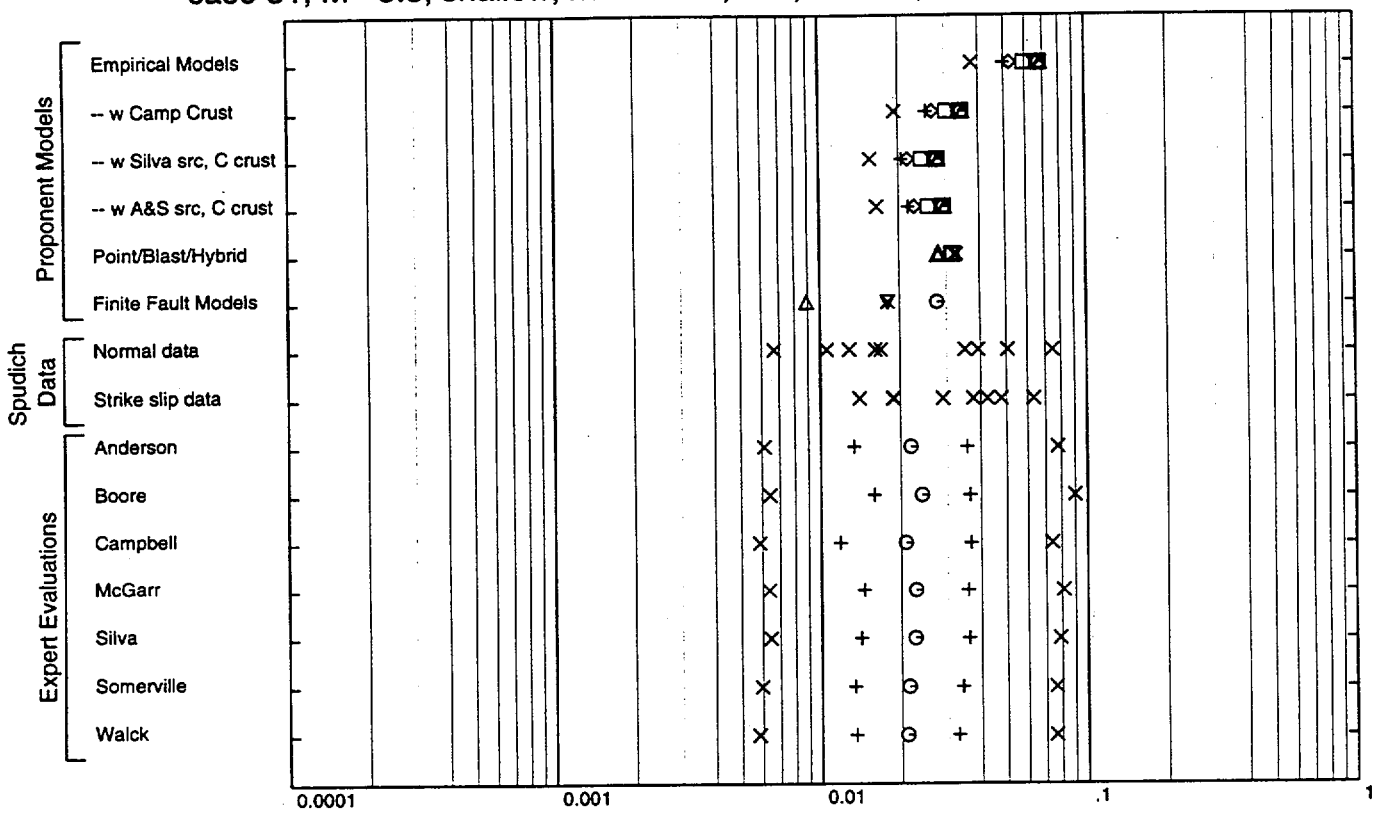
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

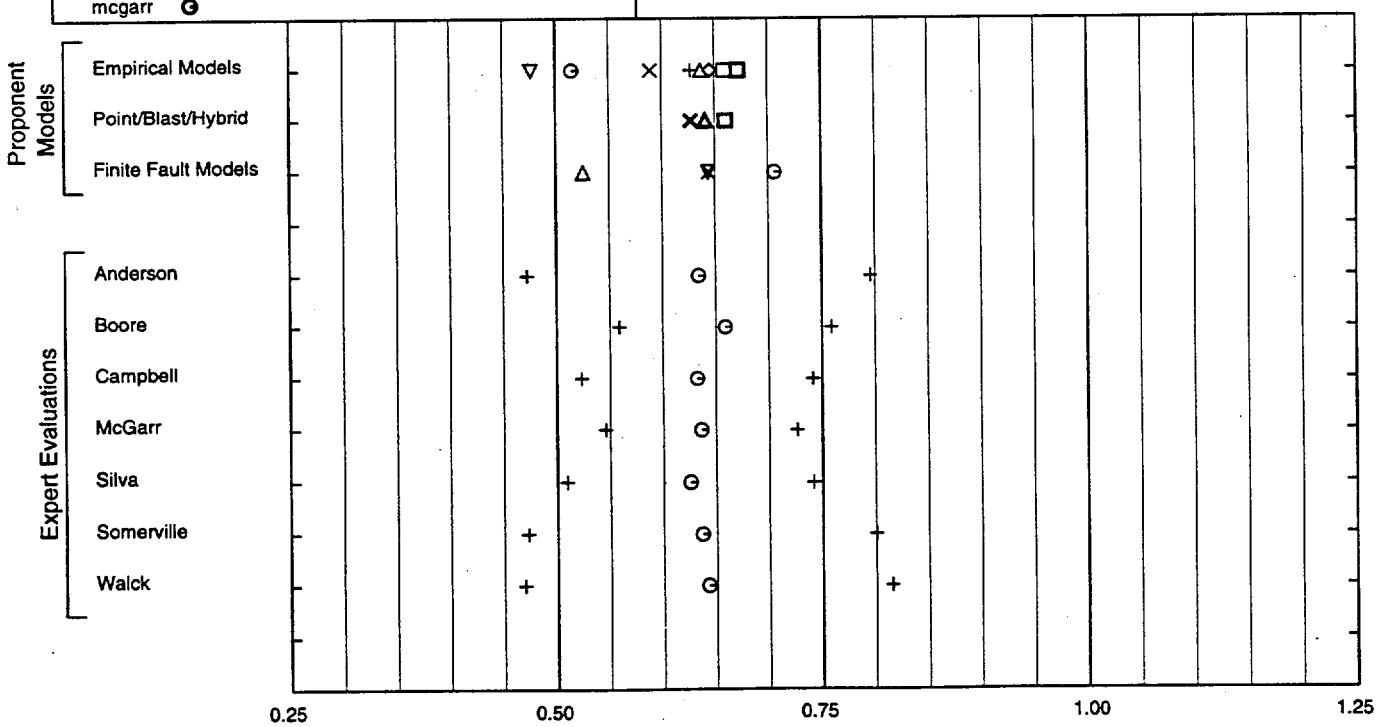
case 31, M= 5.8, shallow, xd= 50 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

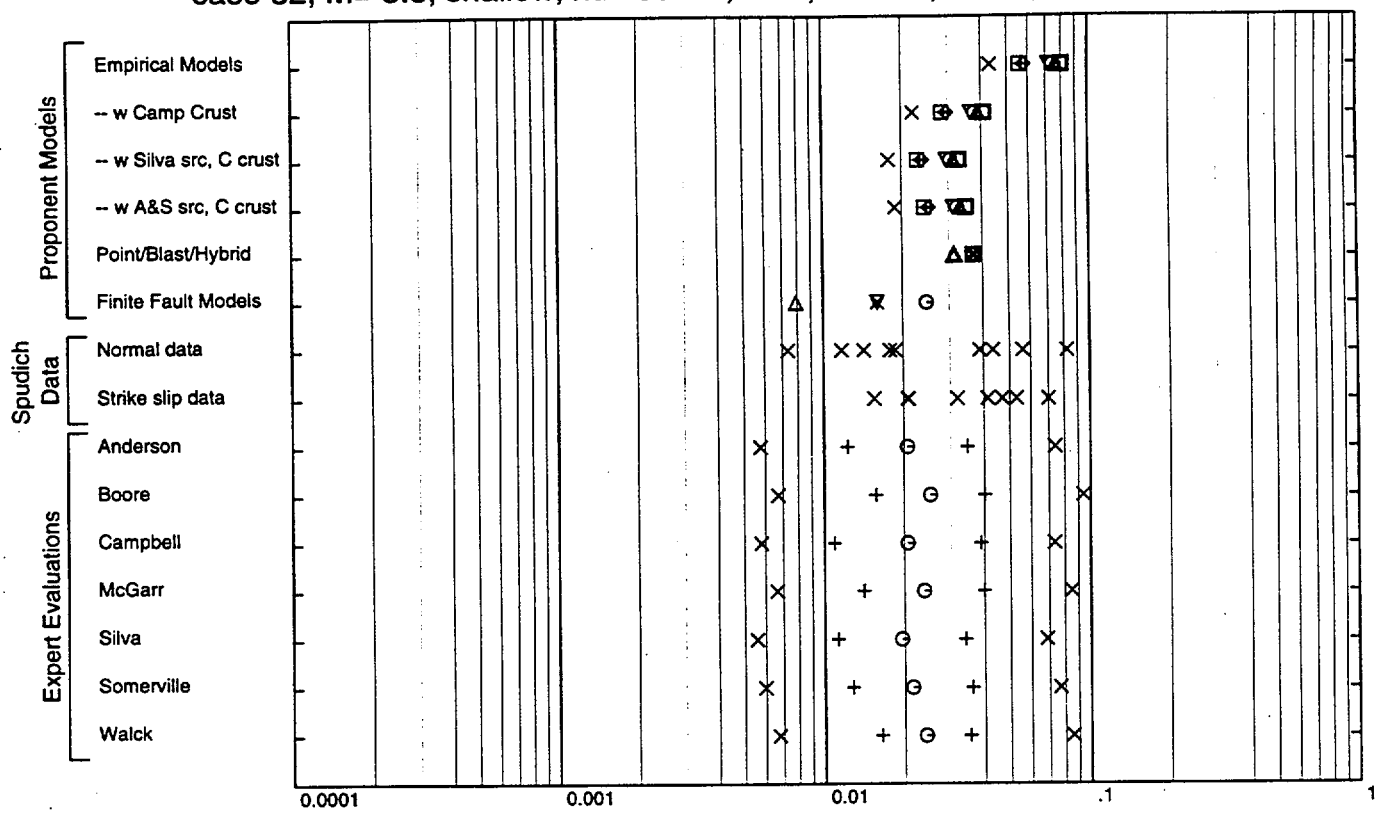
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

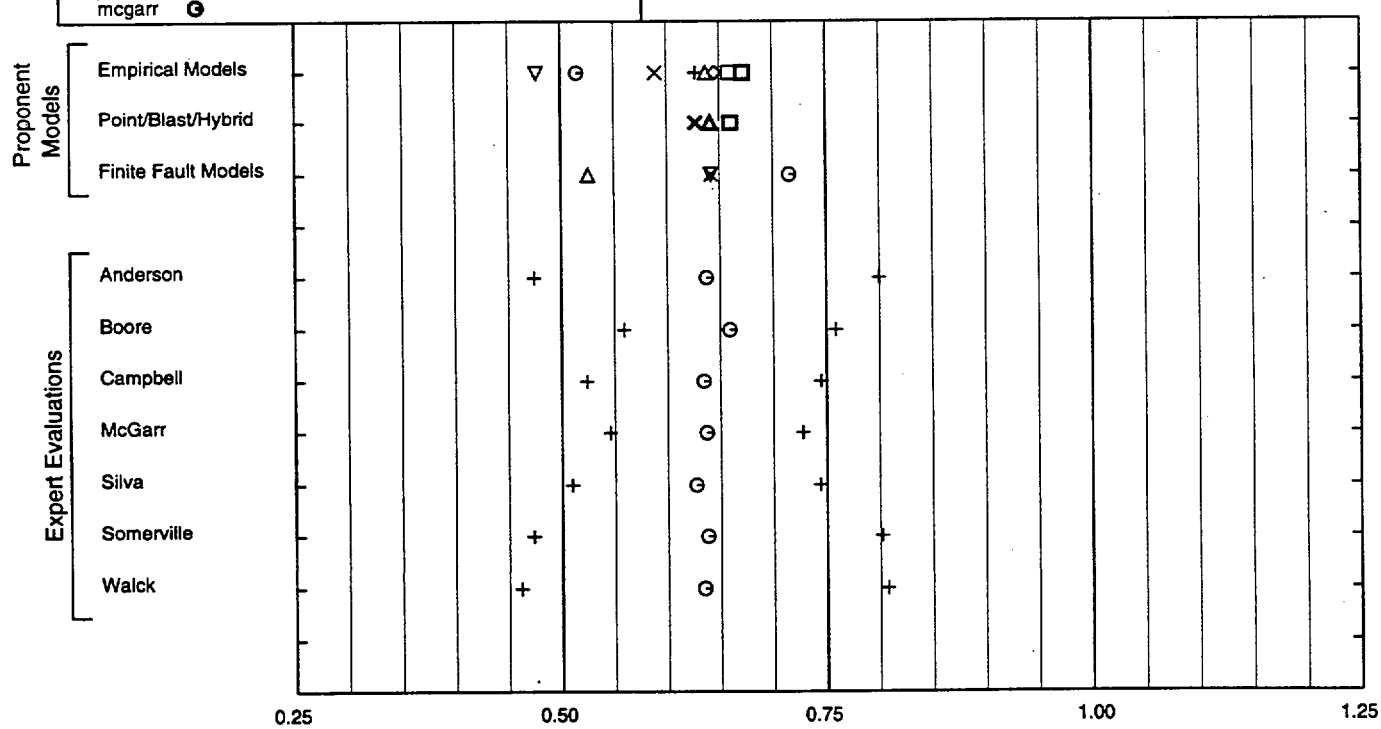
case 32, M= 5.8, shallow, xd= 50 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

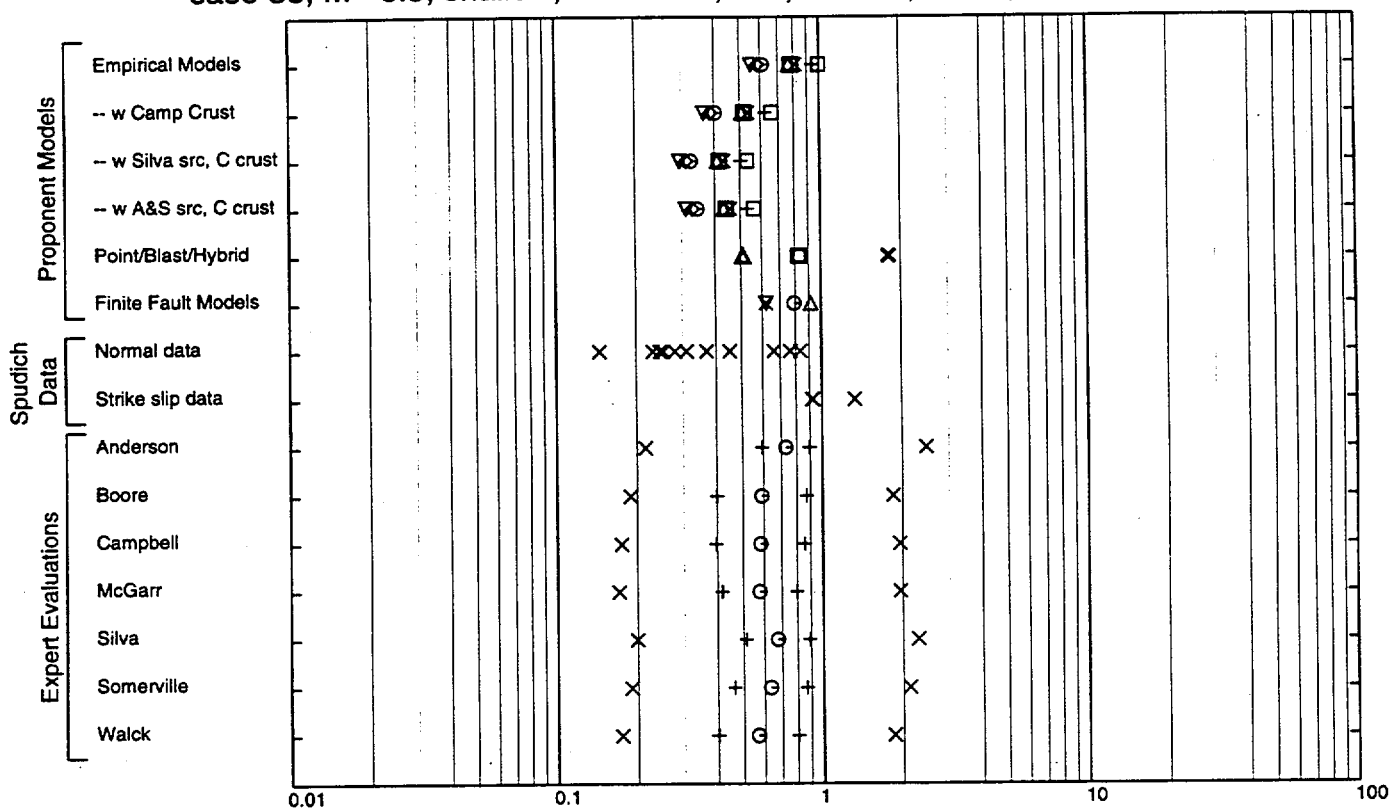
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

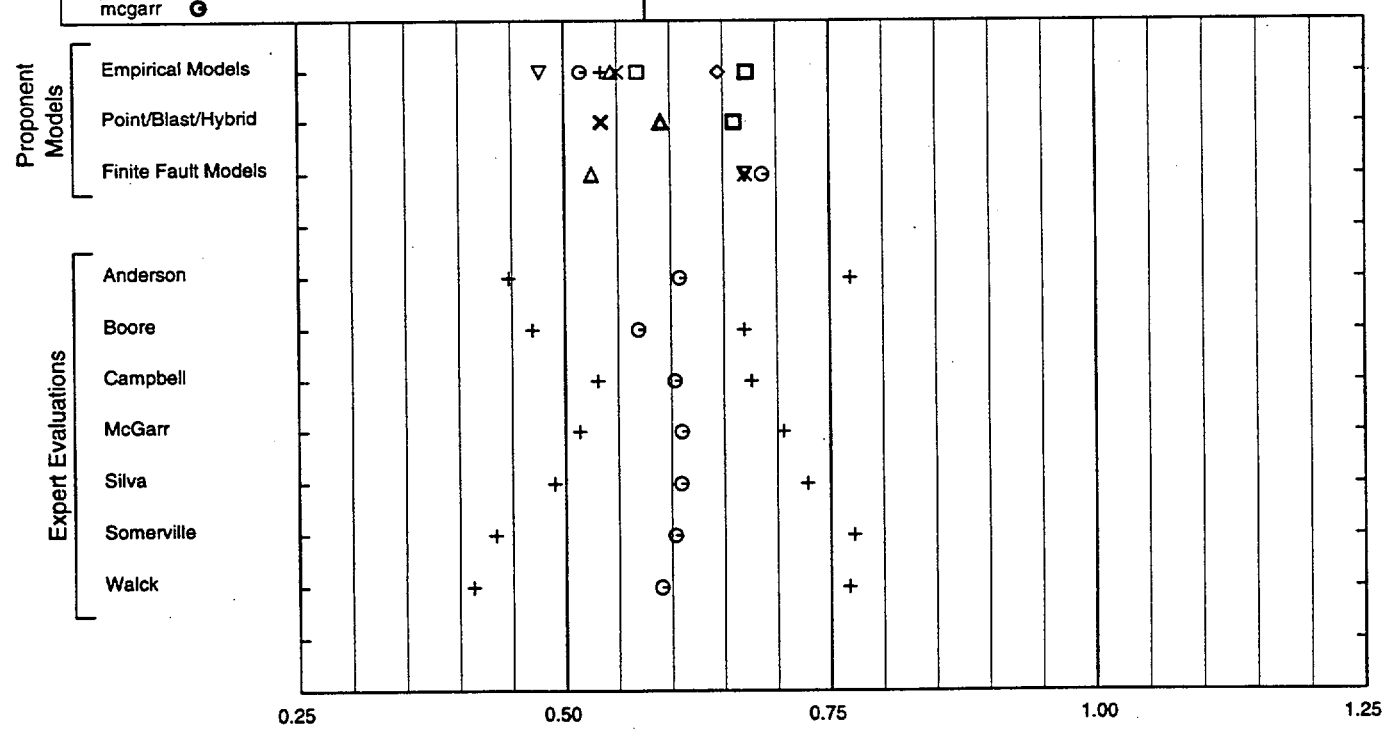
case 33, M= 6.5, shallow, xd= 5 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

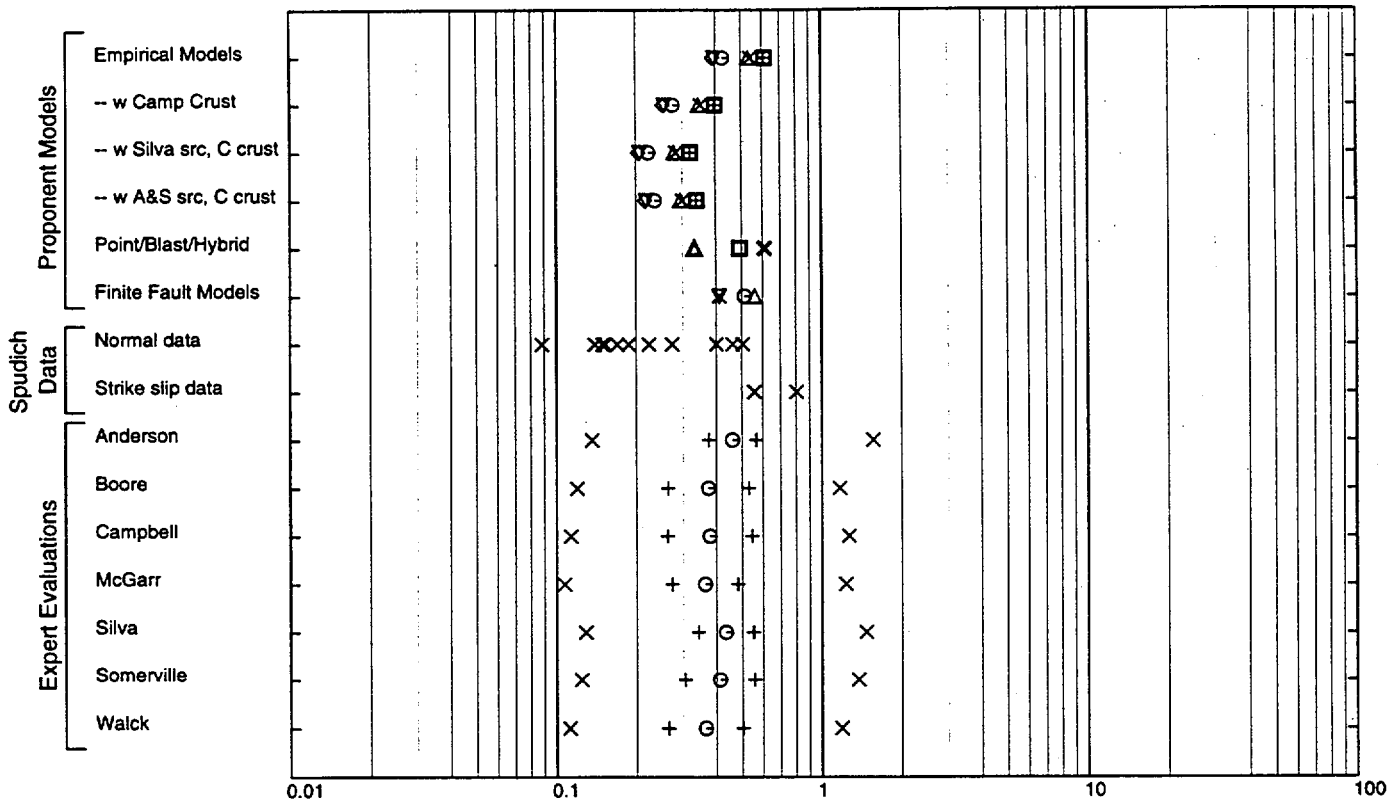
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

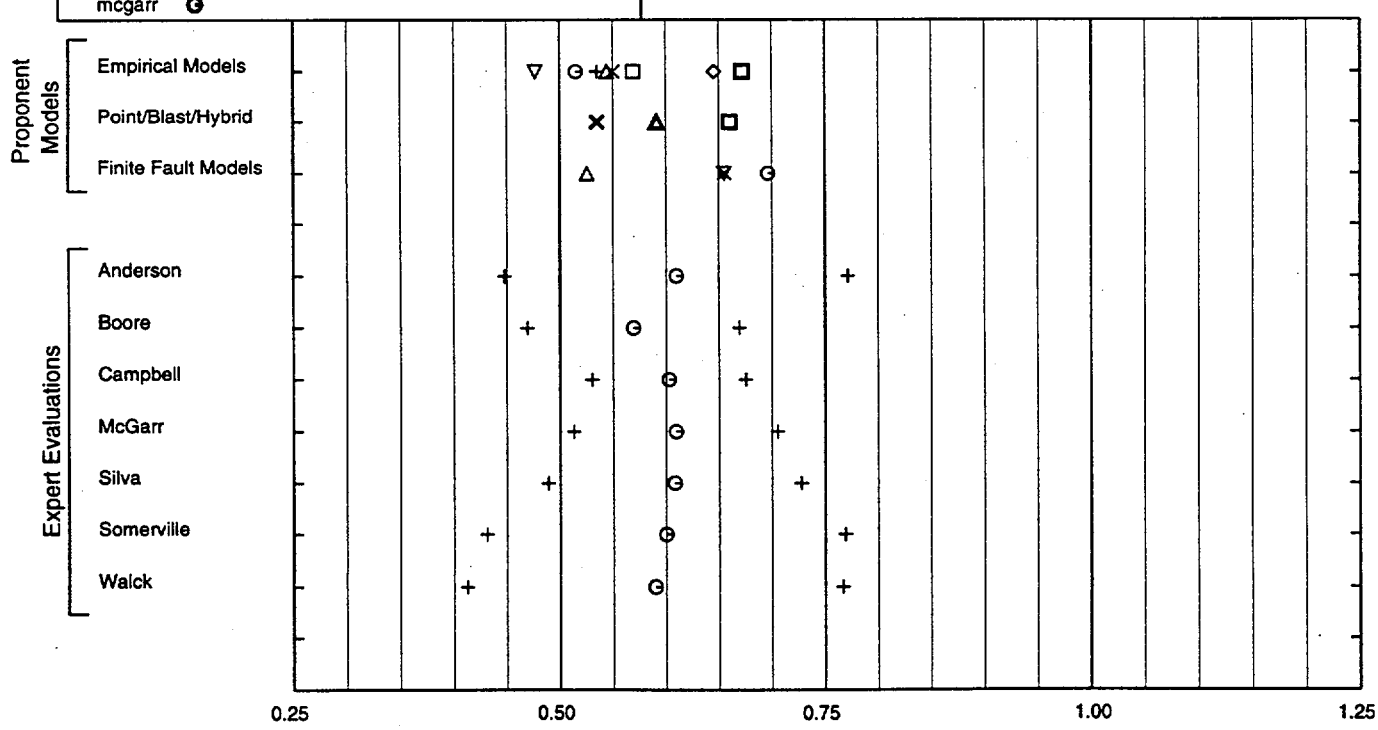
case 34, M= 6.5, shallow, xd= 10 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

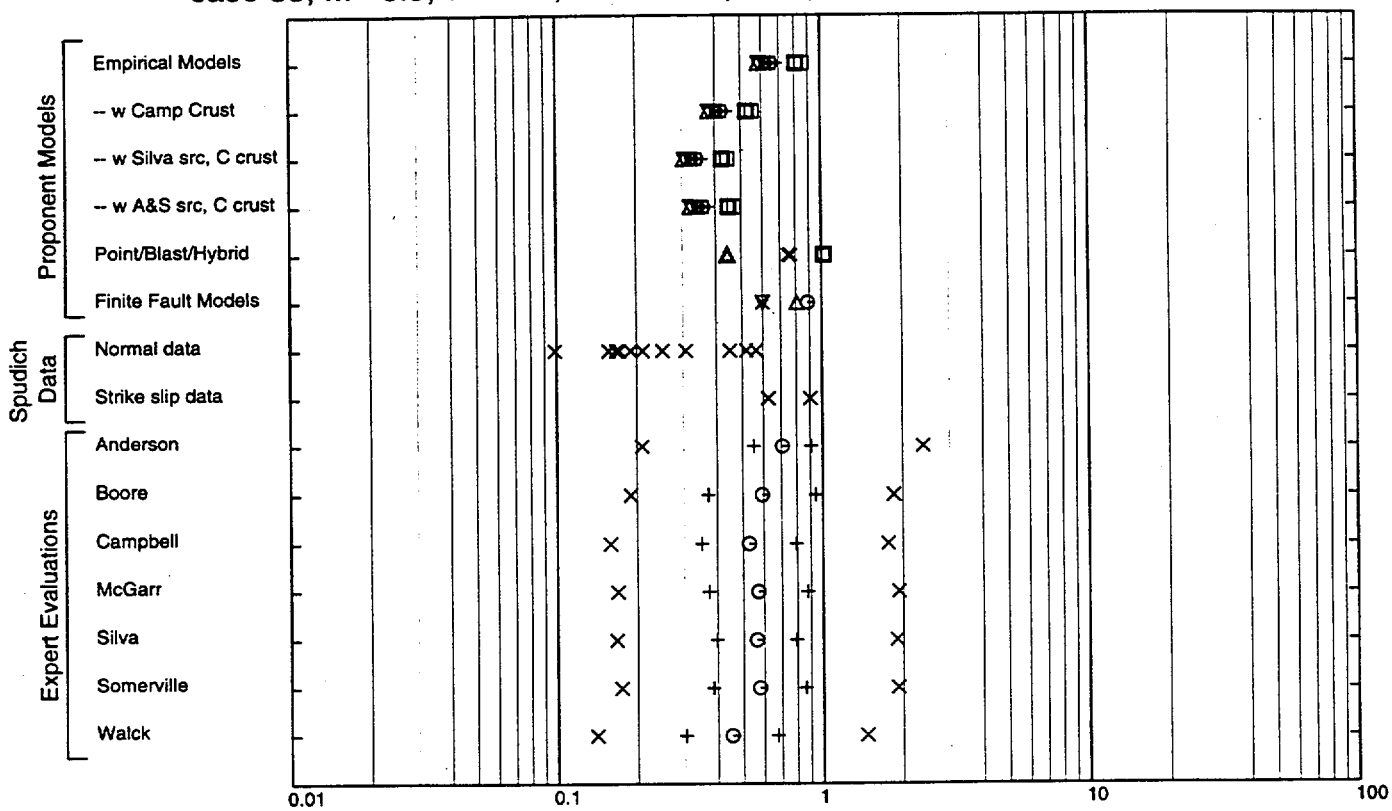
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



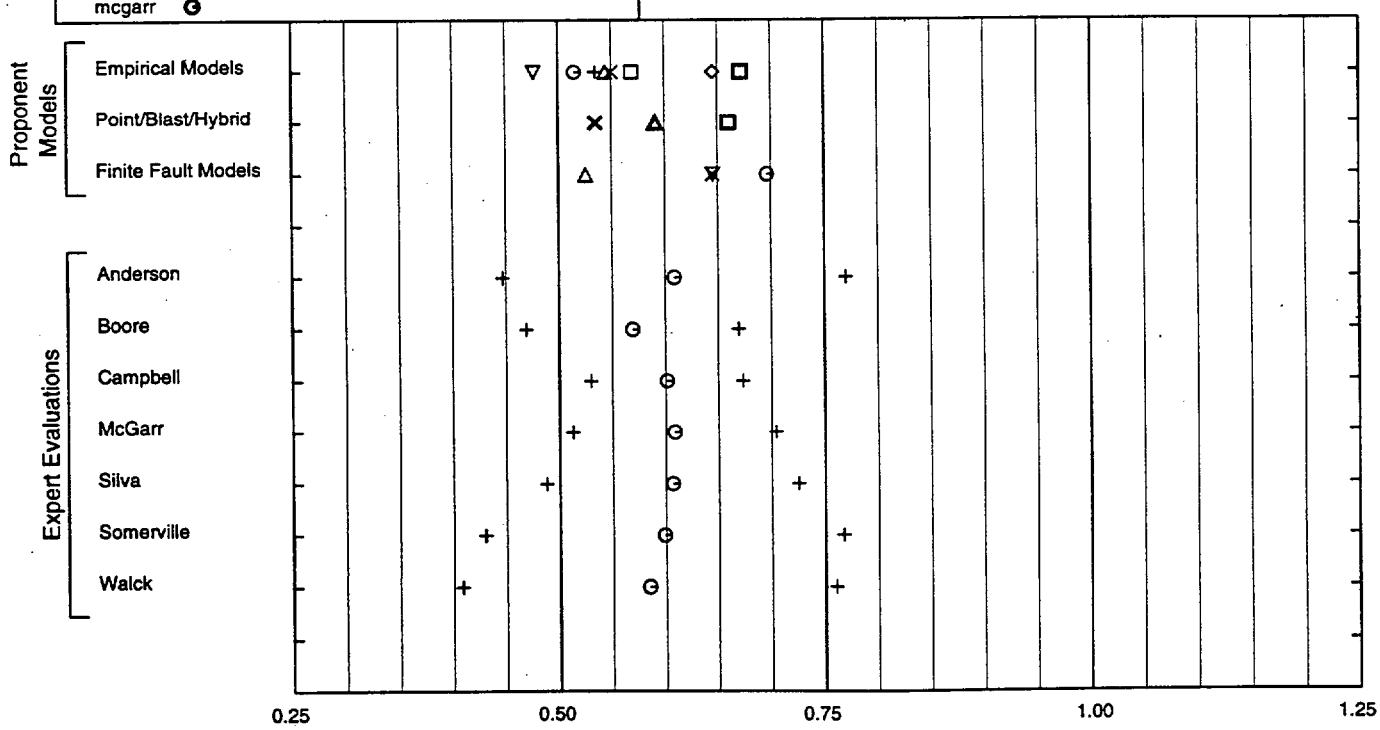
Aleatory Sigma (LN units) w/ Comp Var.

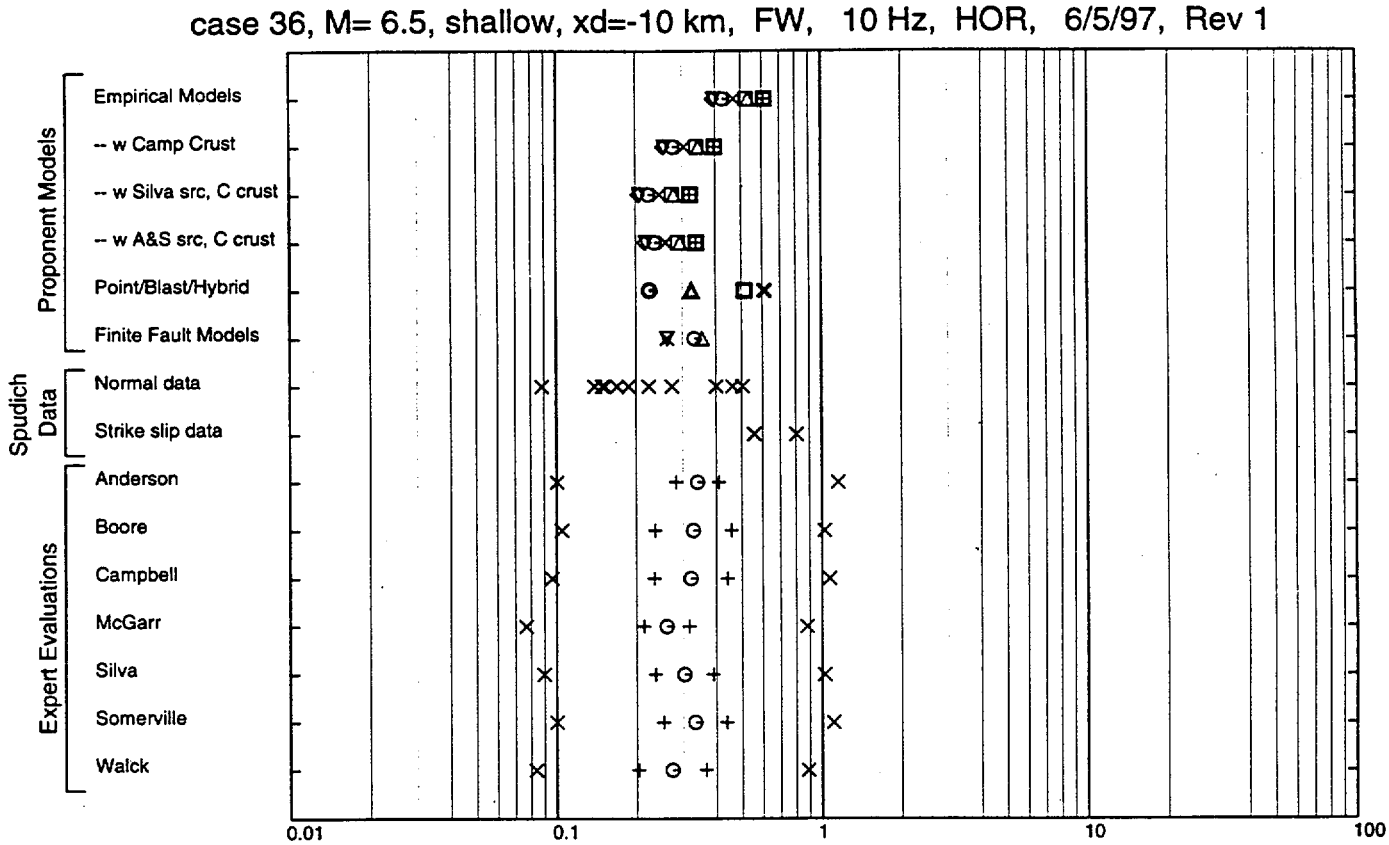
case 35, M= 6.5, shallow, xd= 10 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



LEGEND

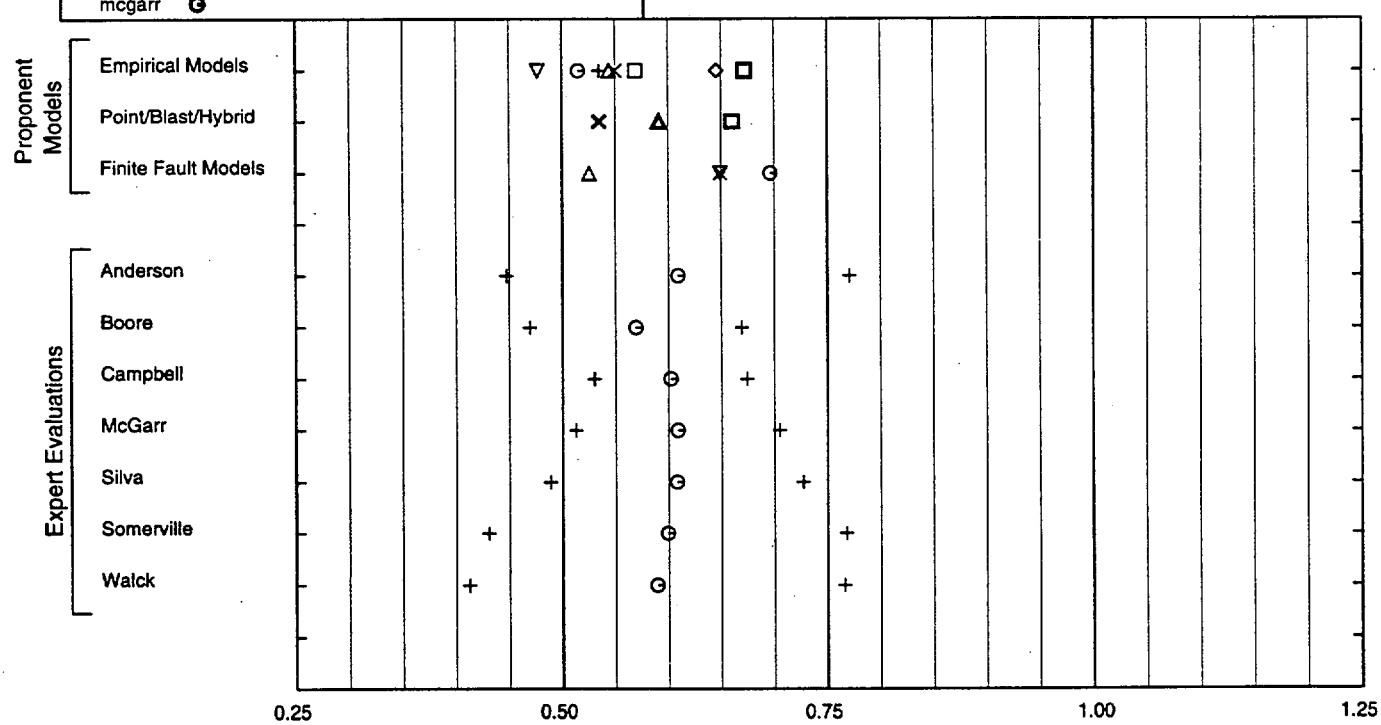
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



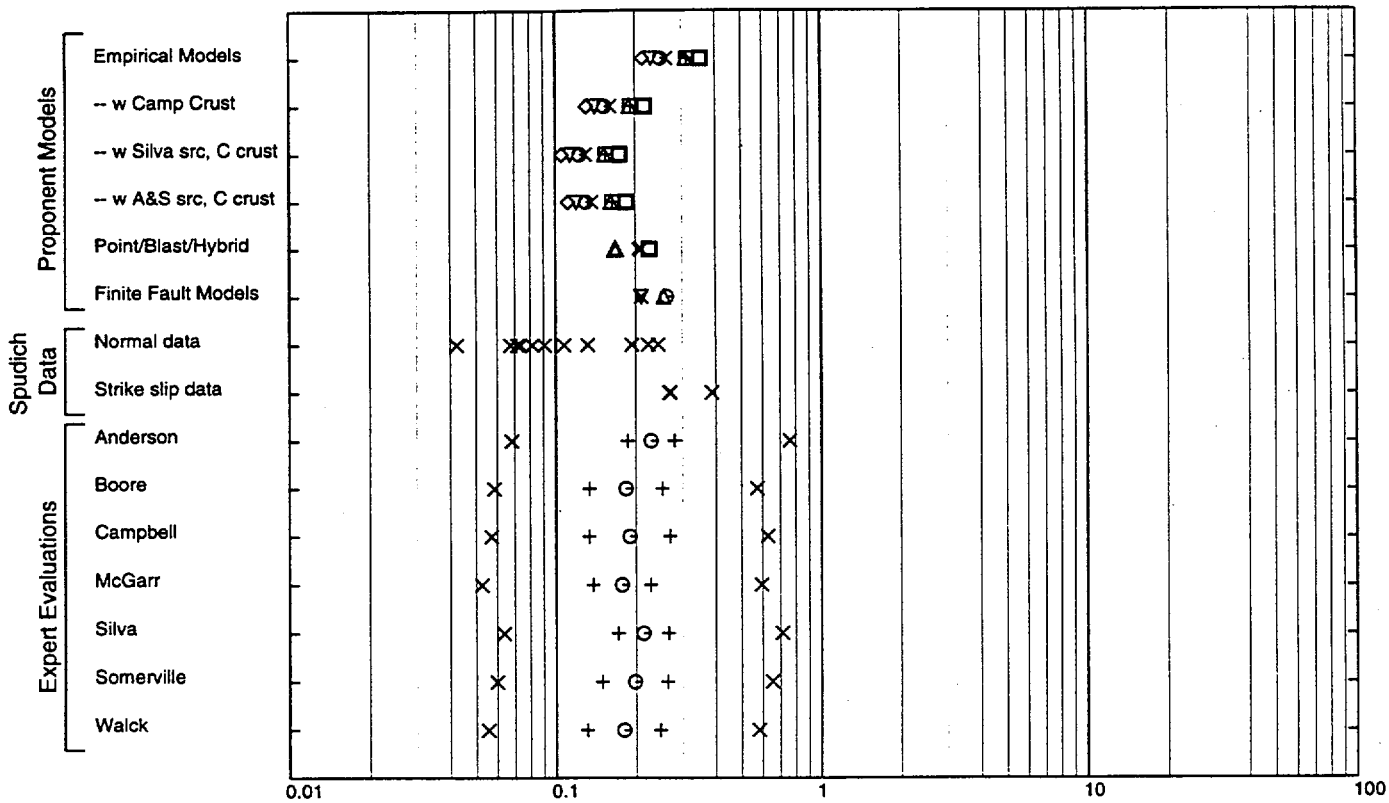


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



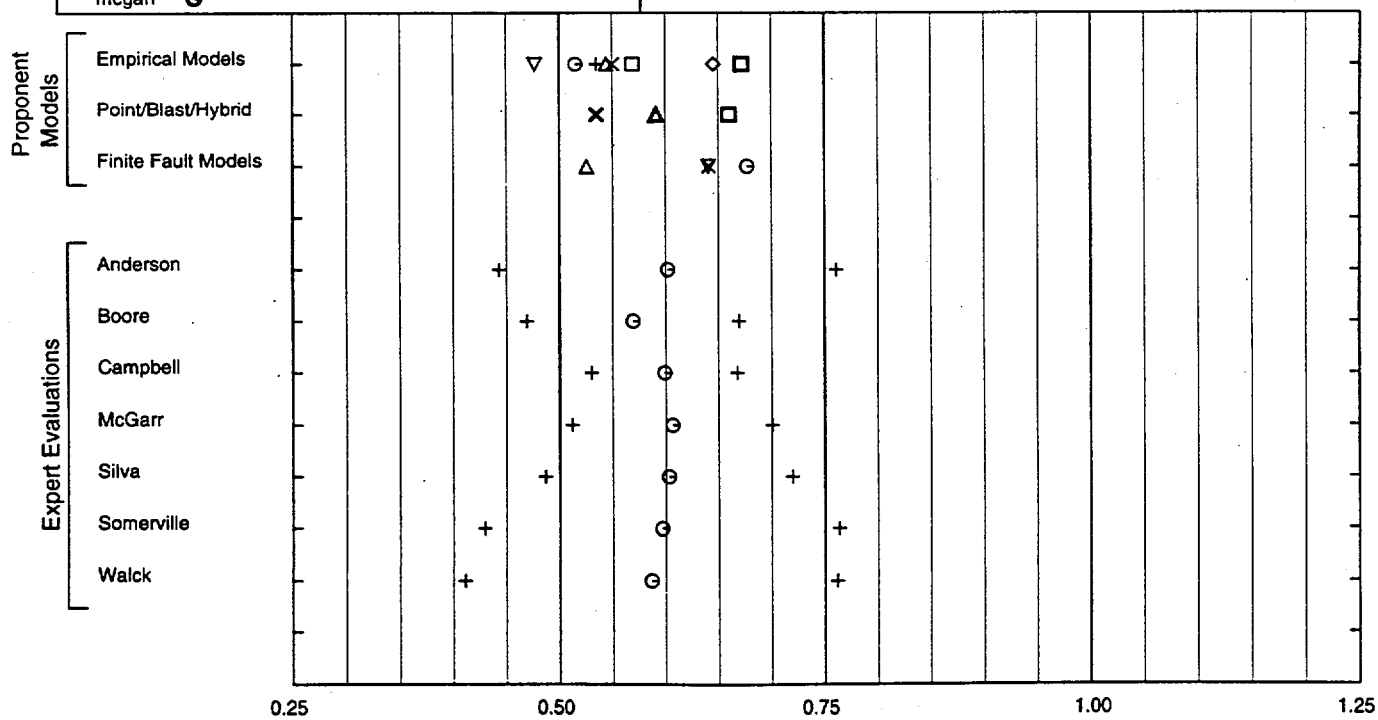
case 37, M= 6.5, shallow, xd= 20 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

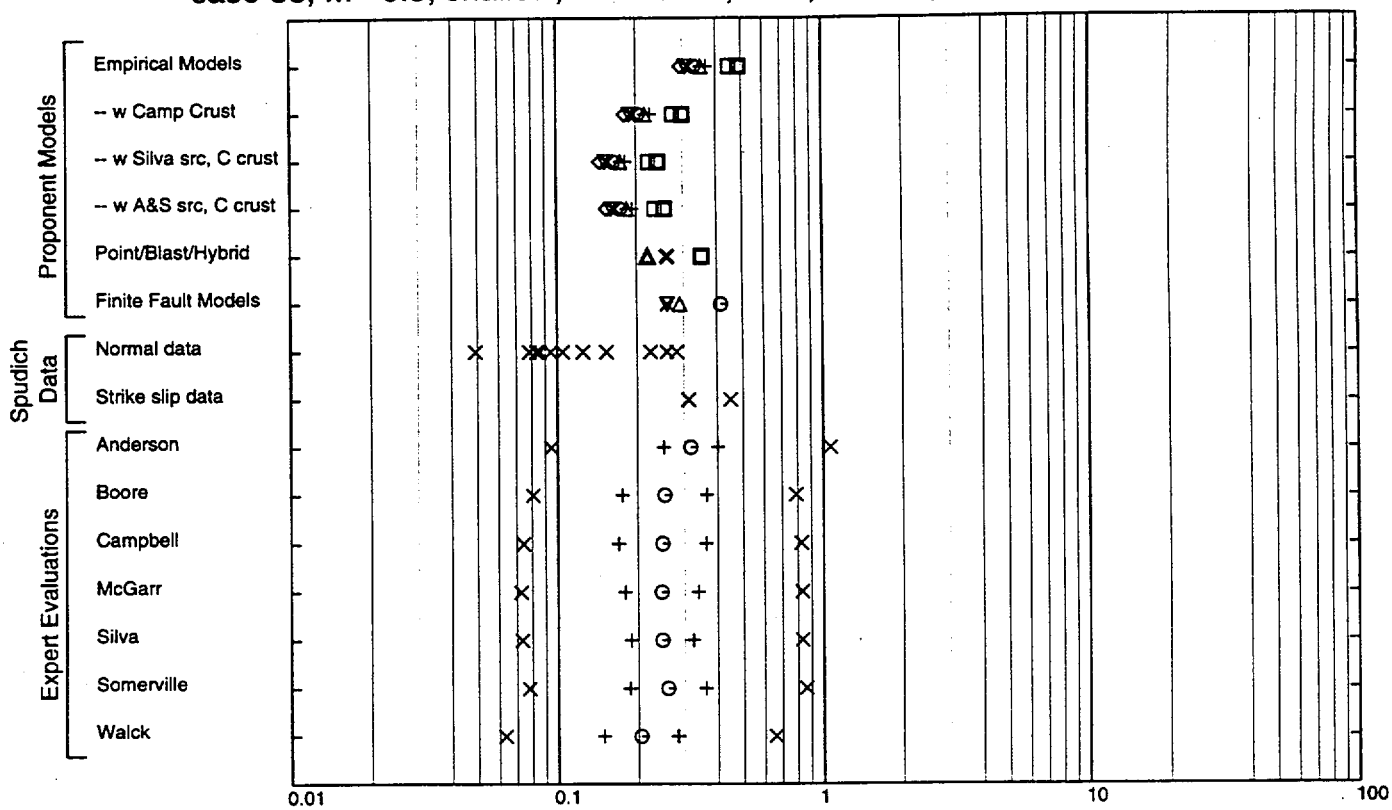
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

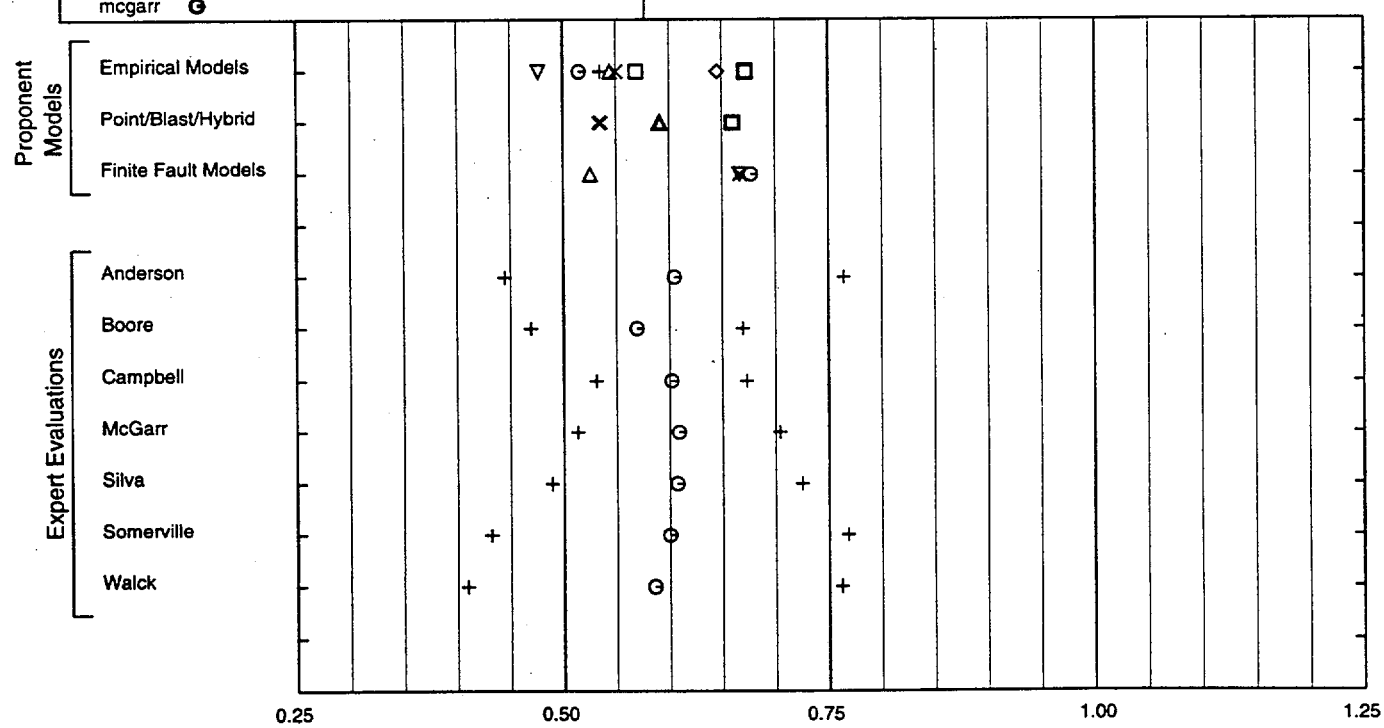
case 38, M= 6.5, shallow, xd= 20 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

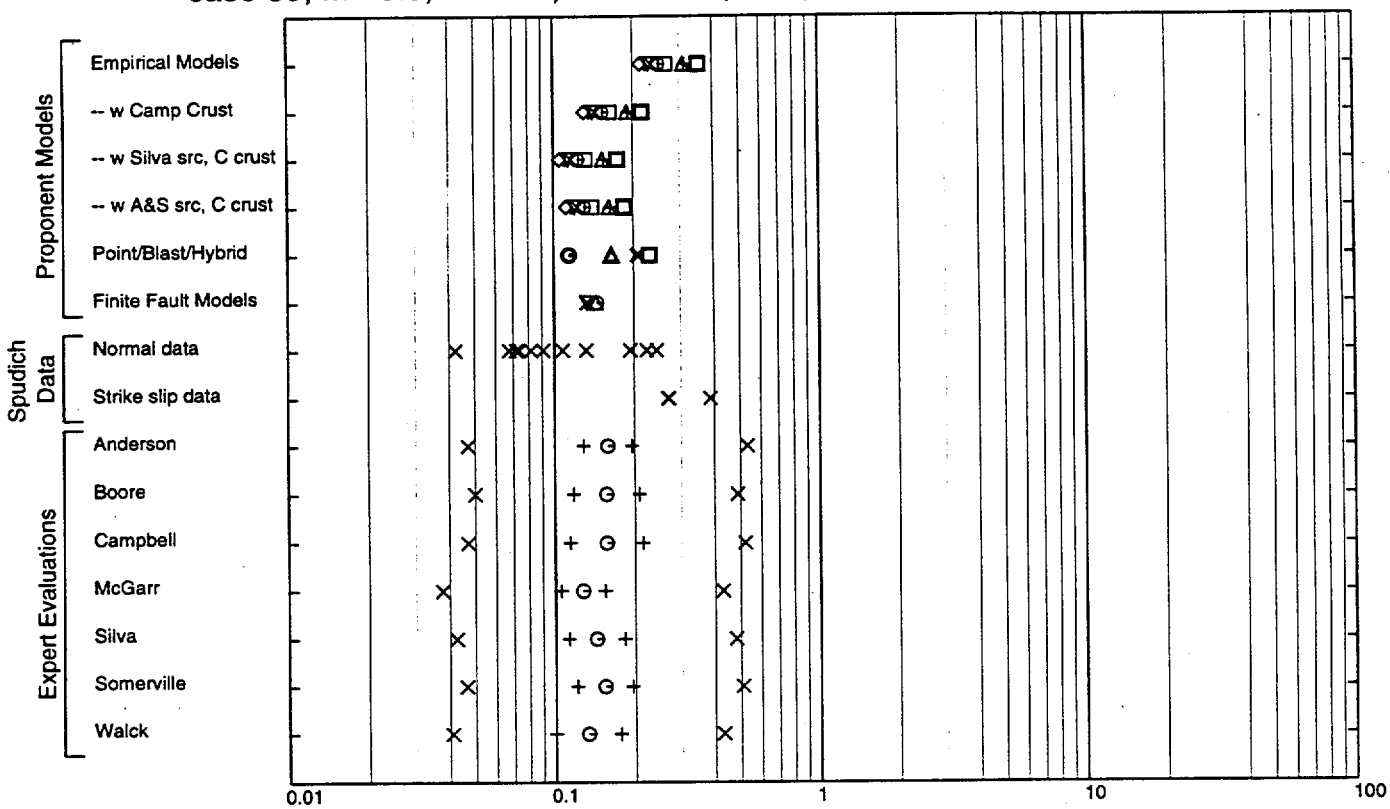
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

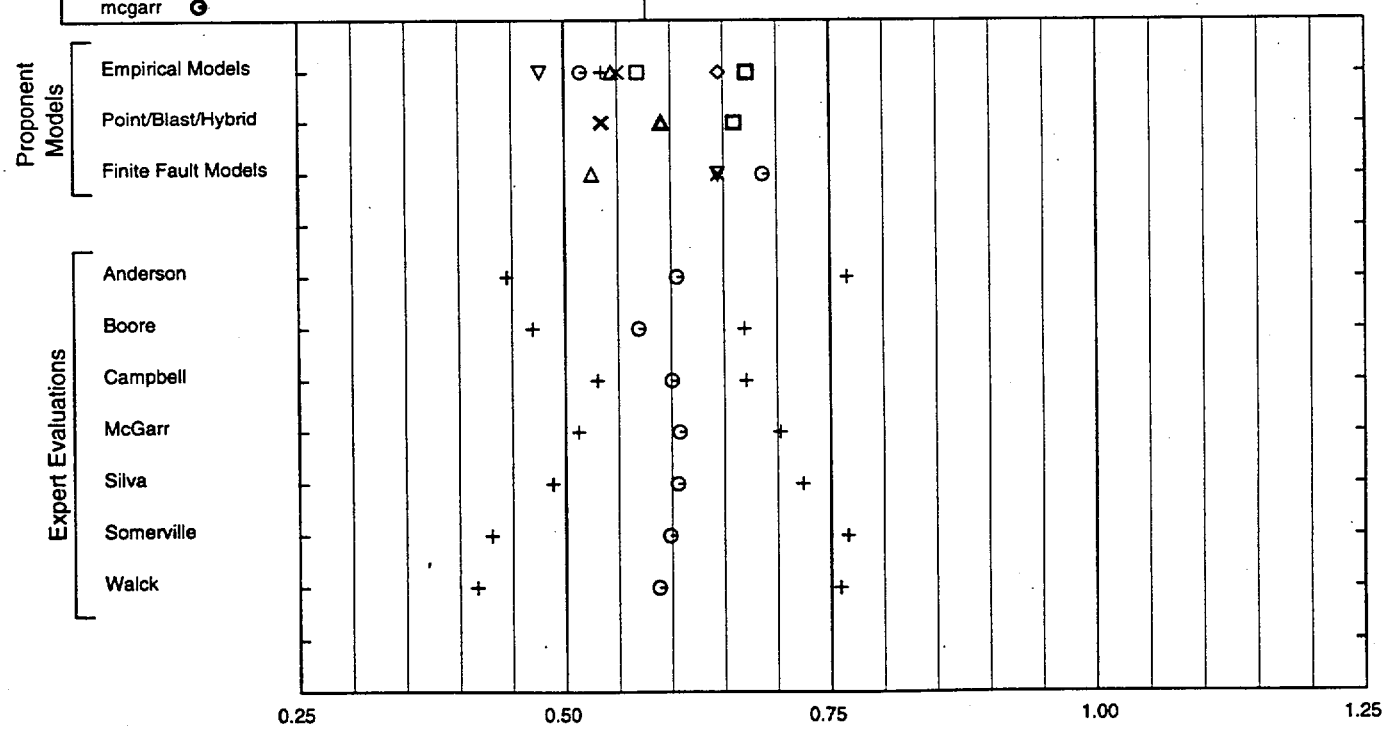
case 39, M= 6.5, shallow, xd=-20 km, FW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

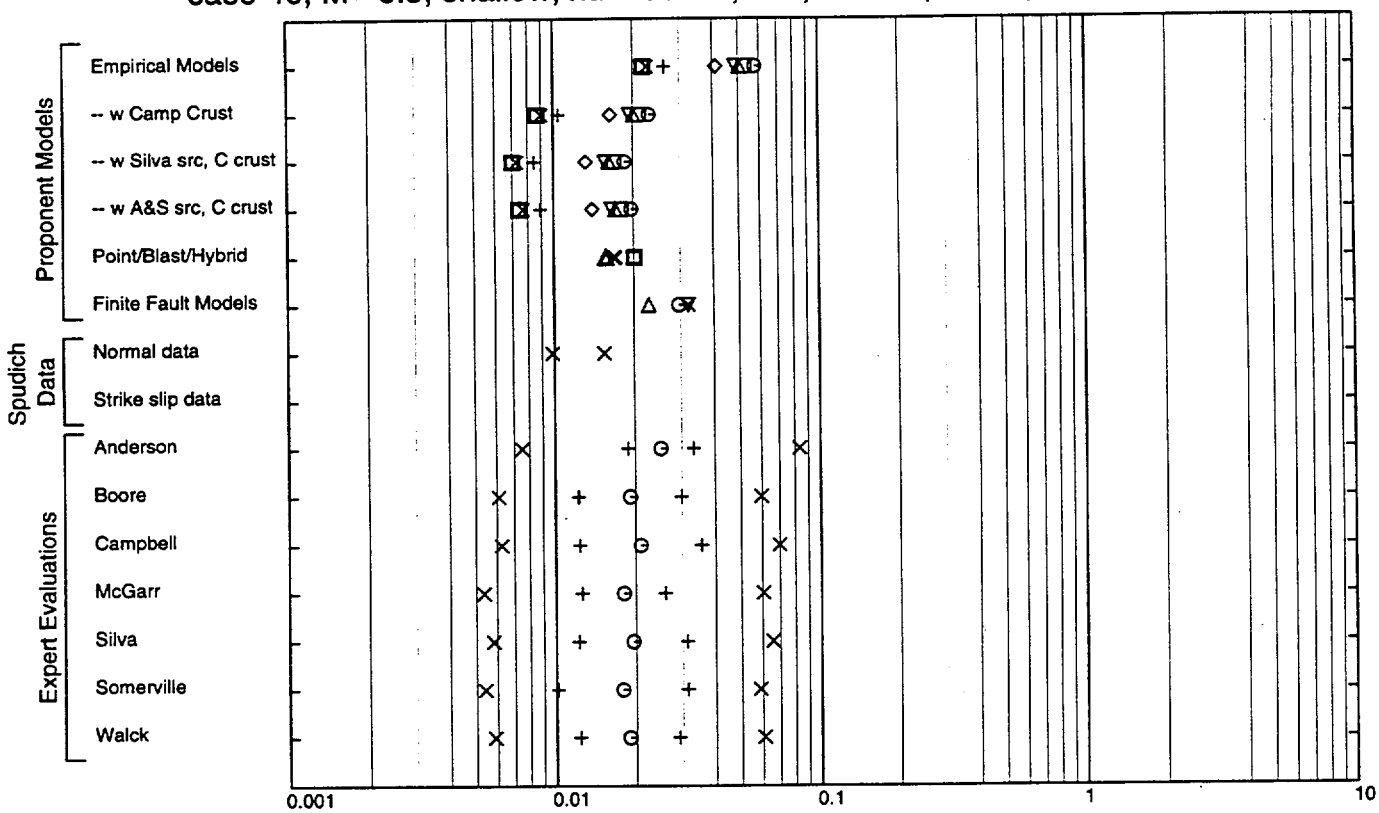
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

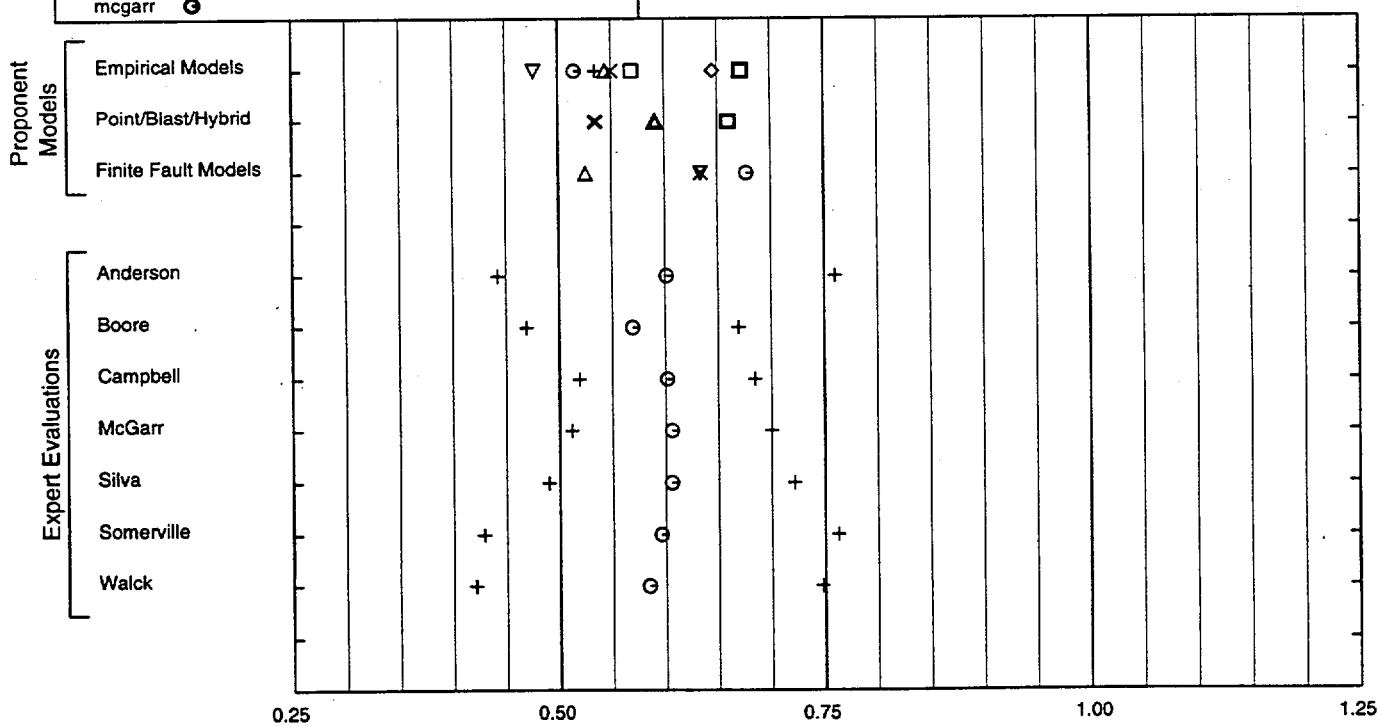
case 40, M= 6.5, shallow, xd=100 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

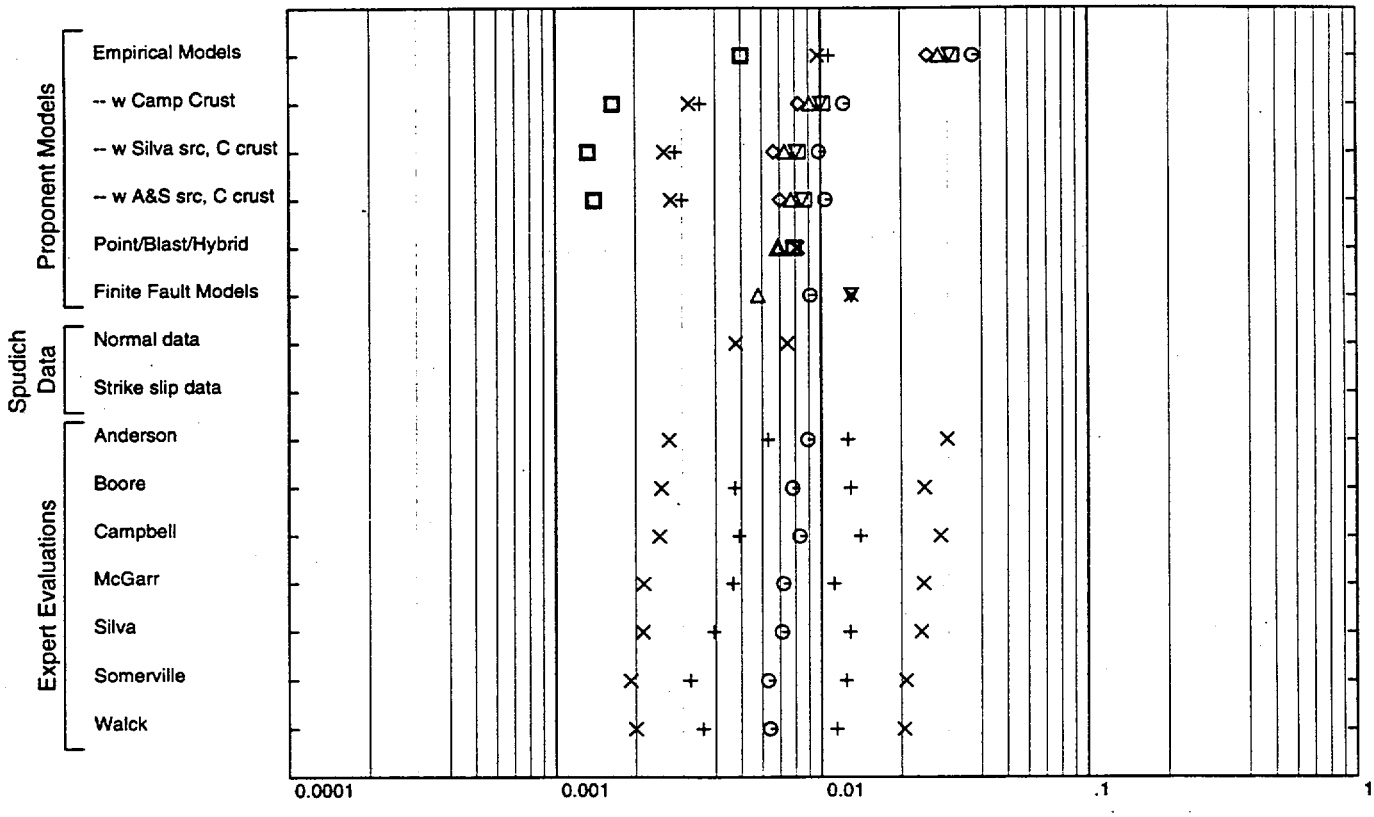
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

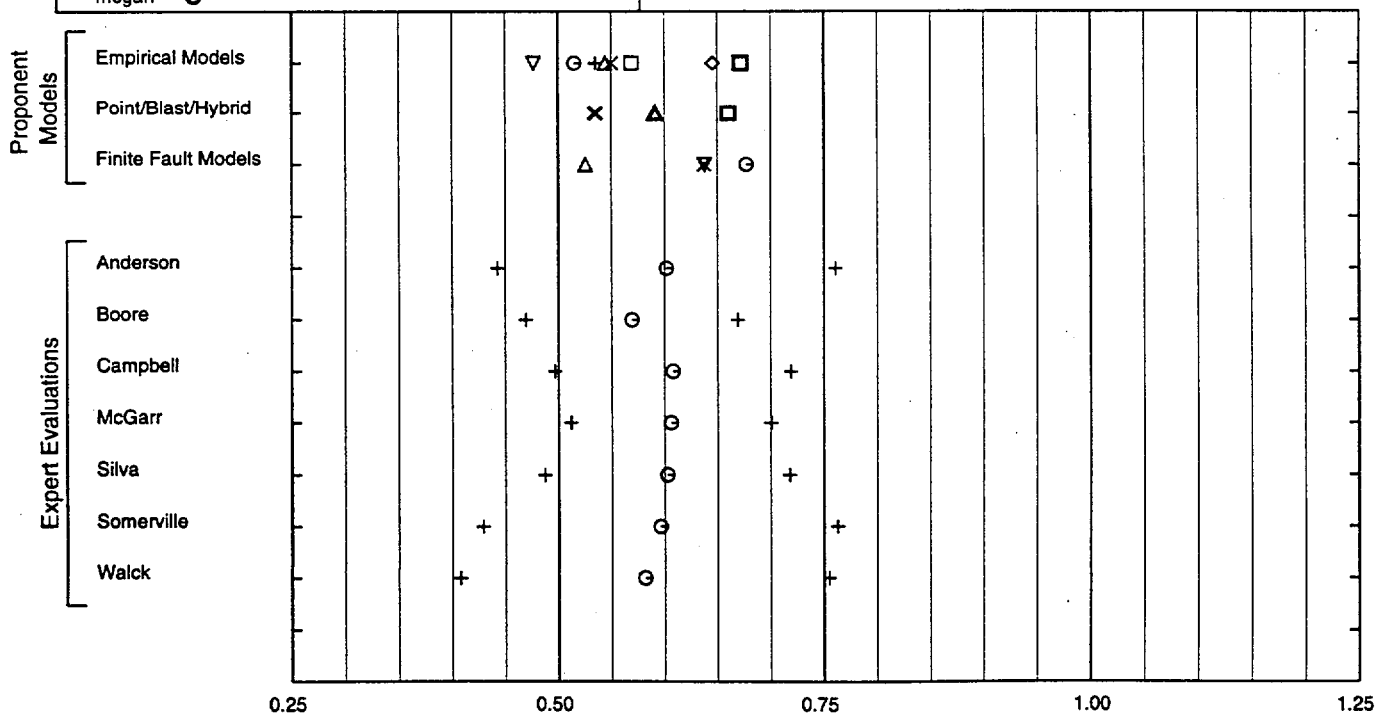
case 41, M= 6.5, shallow, xd=160 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



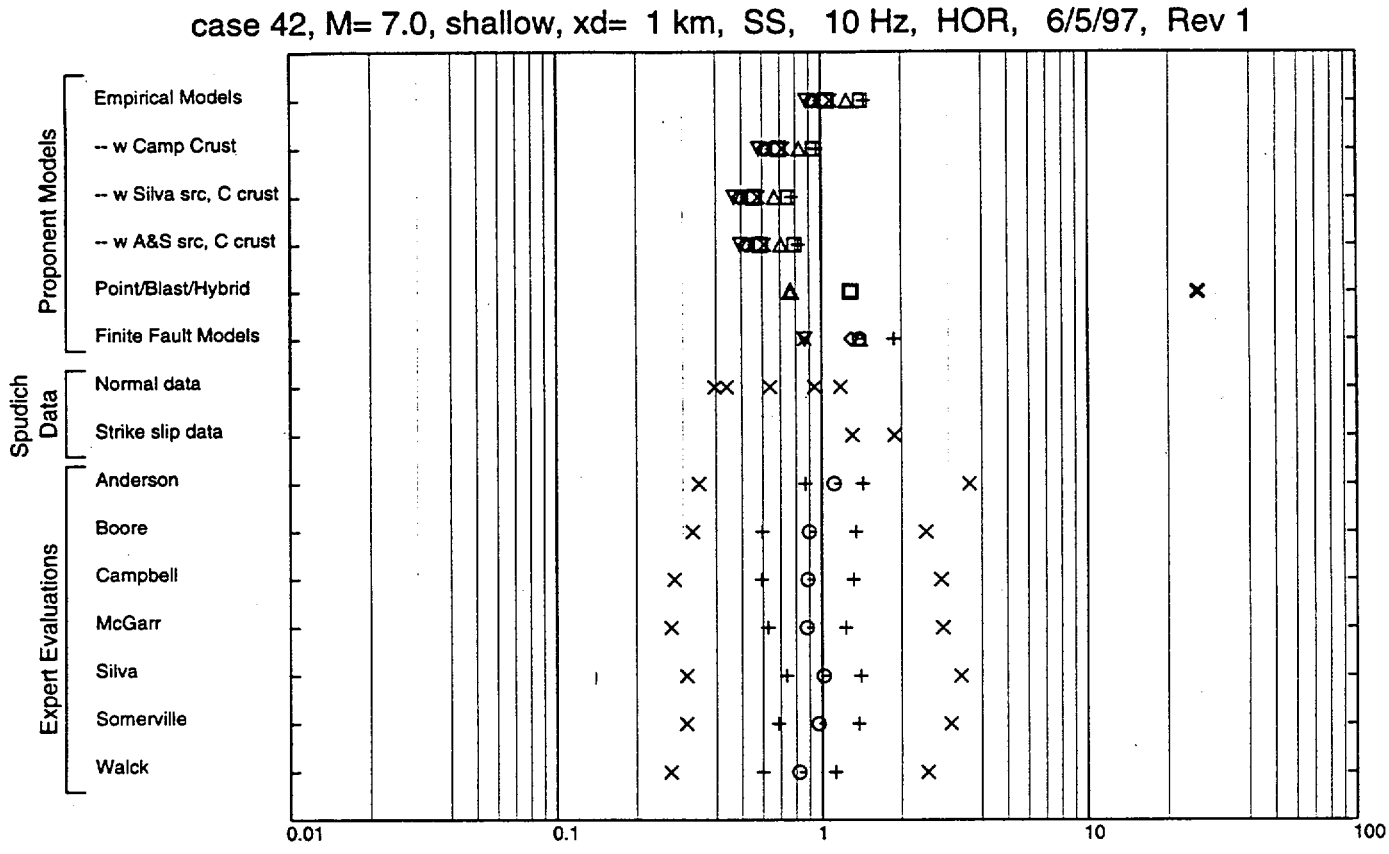
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

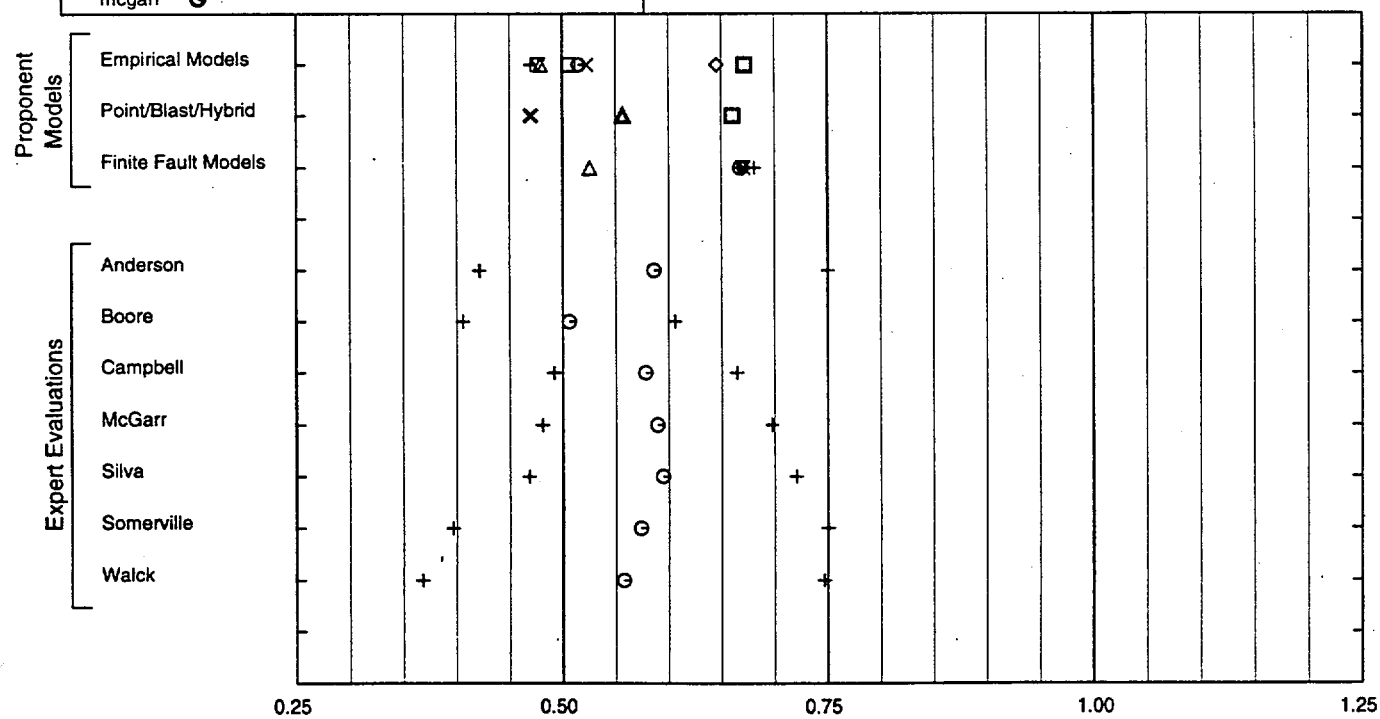


Aleatory Sigma (LN units) w/ Comp Var.

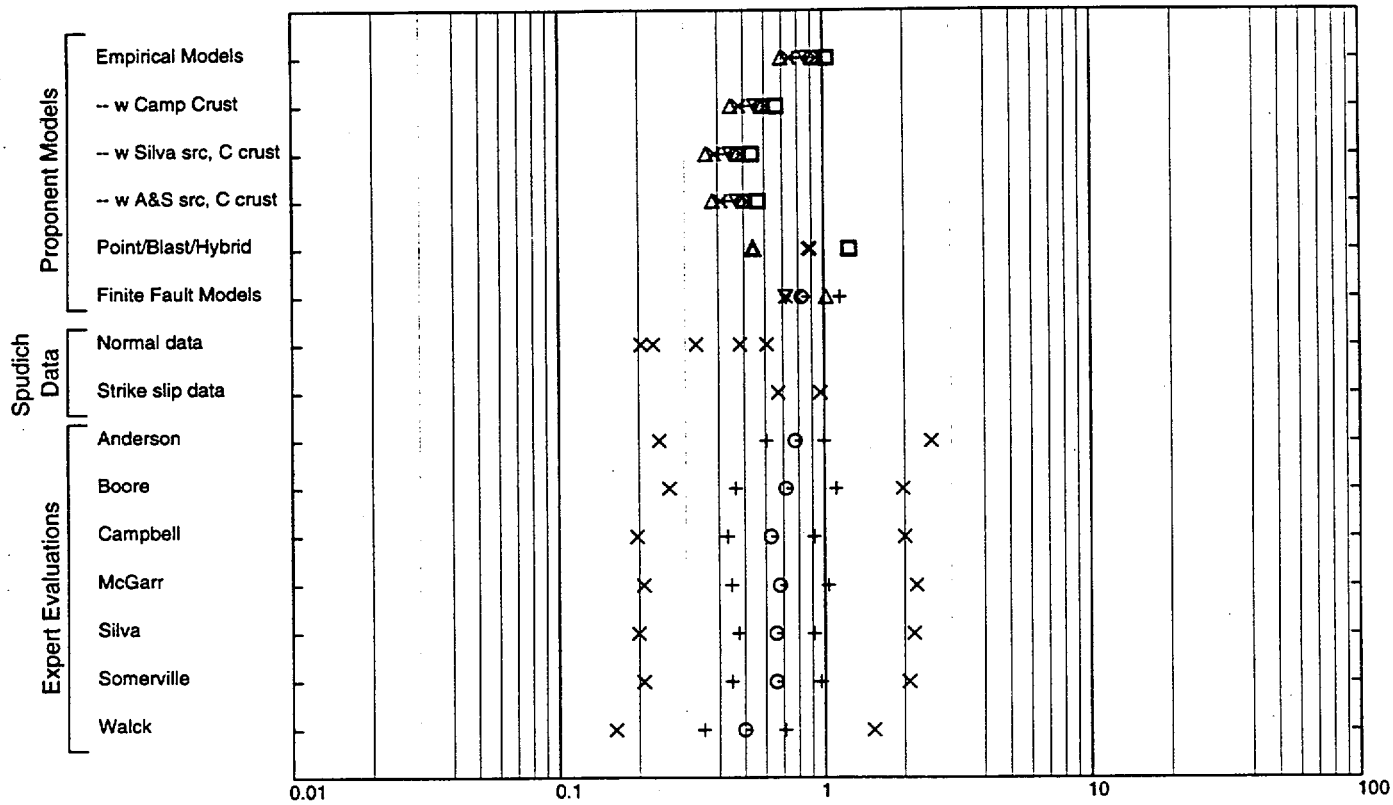


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



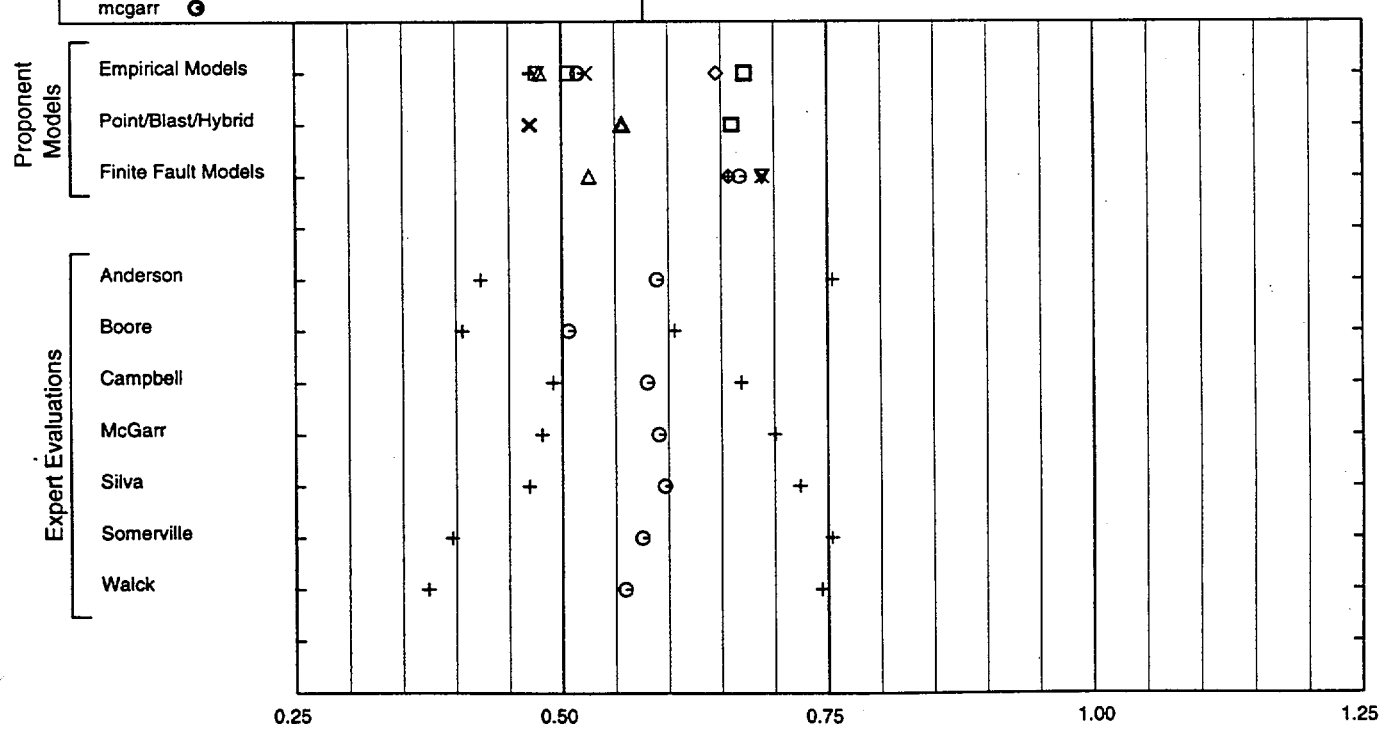
case 43, M= 7.0, shallow, xd= 10 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

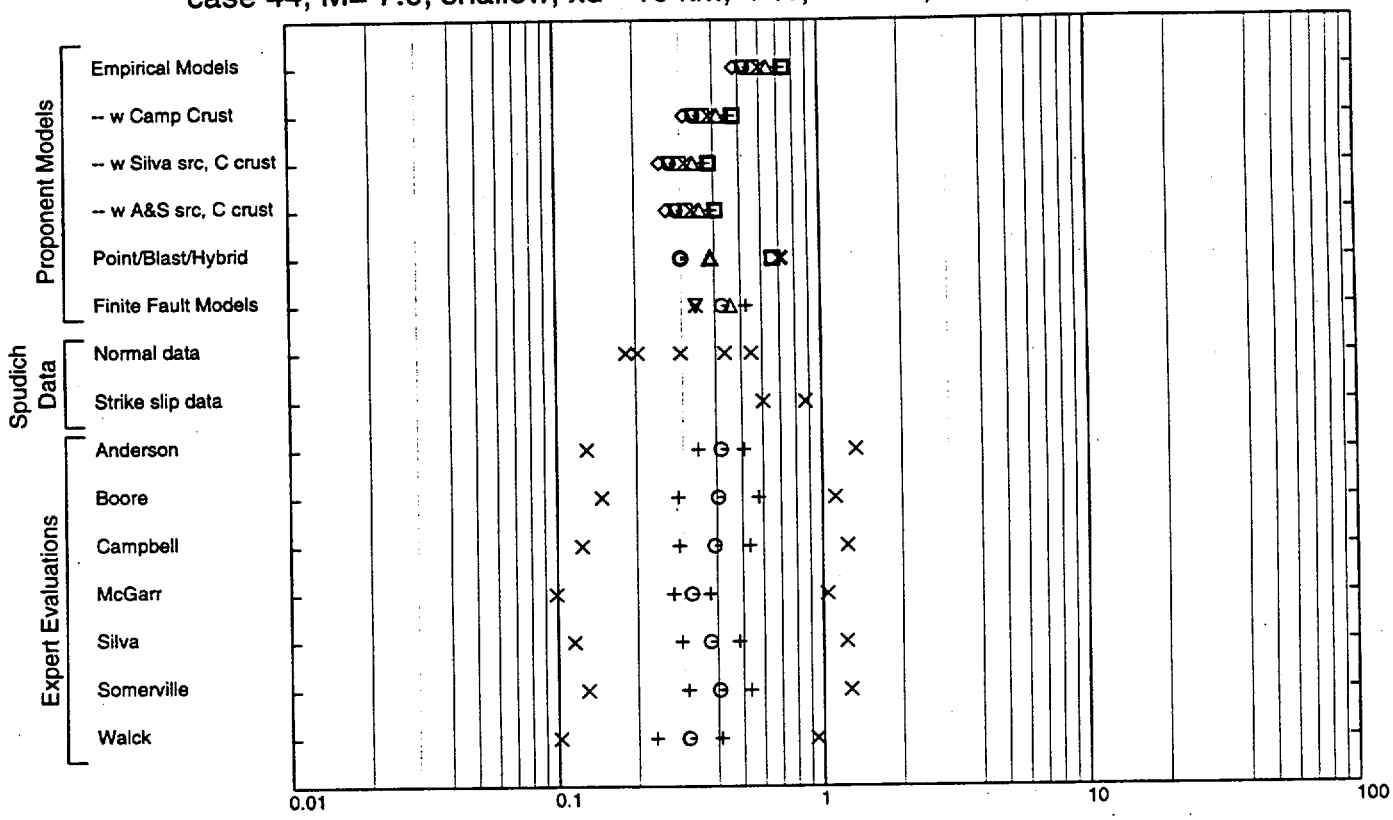
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

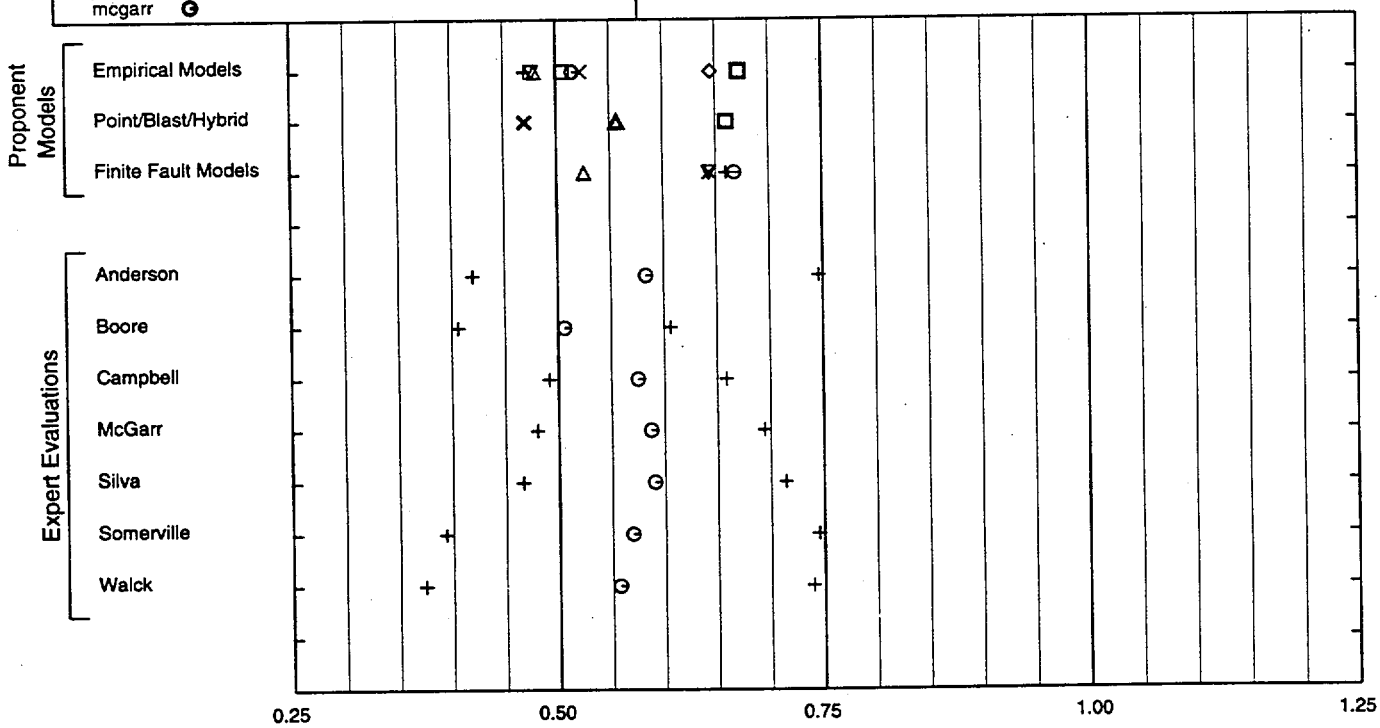
case 44, M= 7.0, shallow, xd=-10 km, FW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

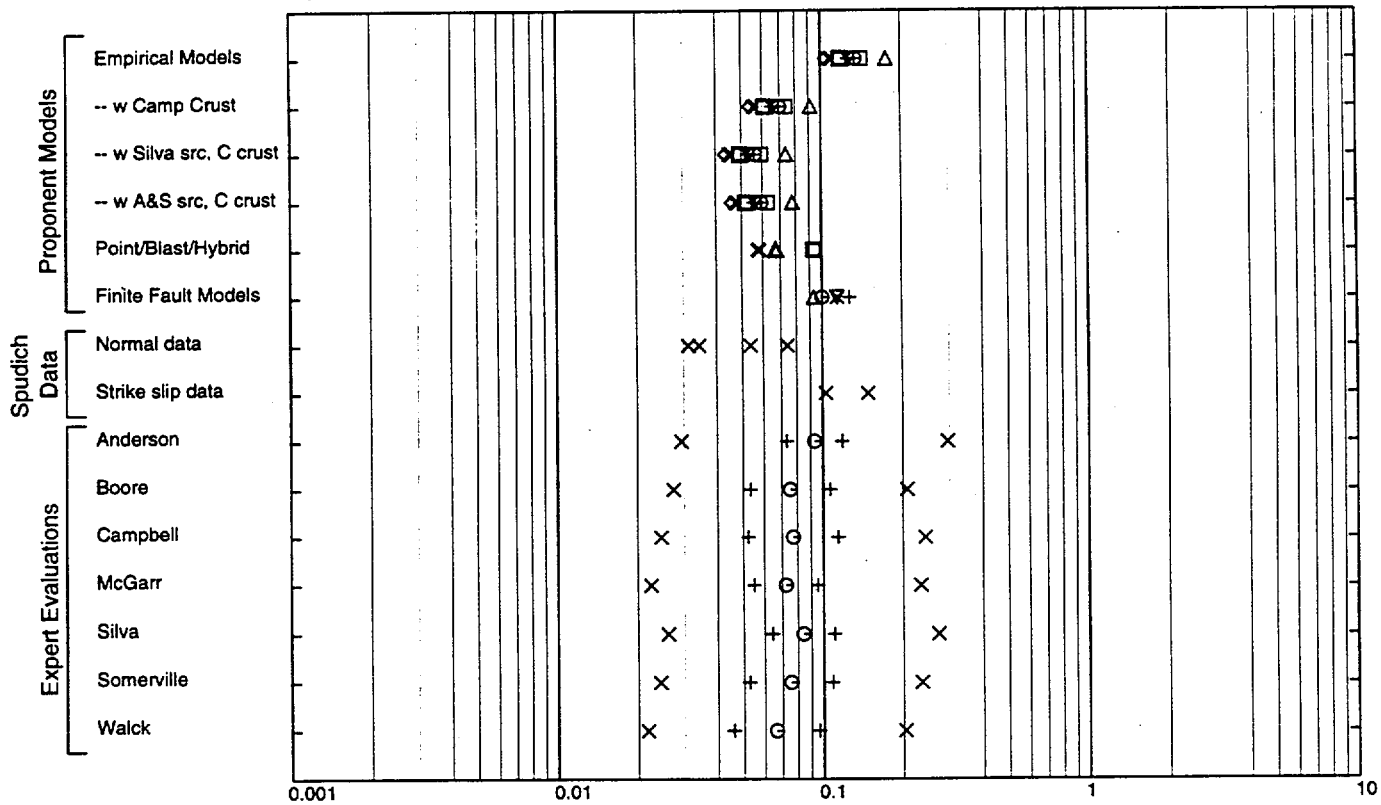
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



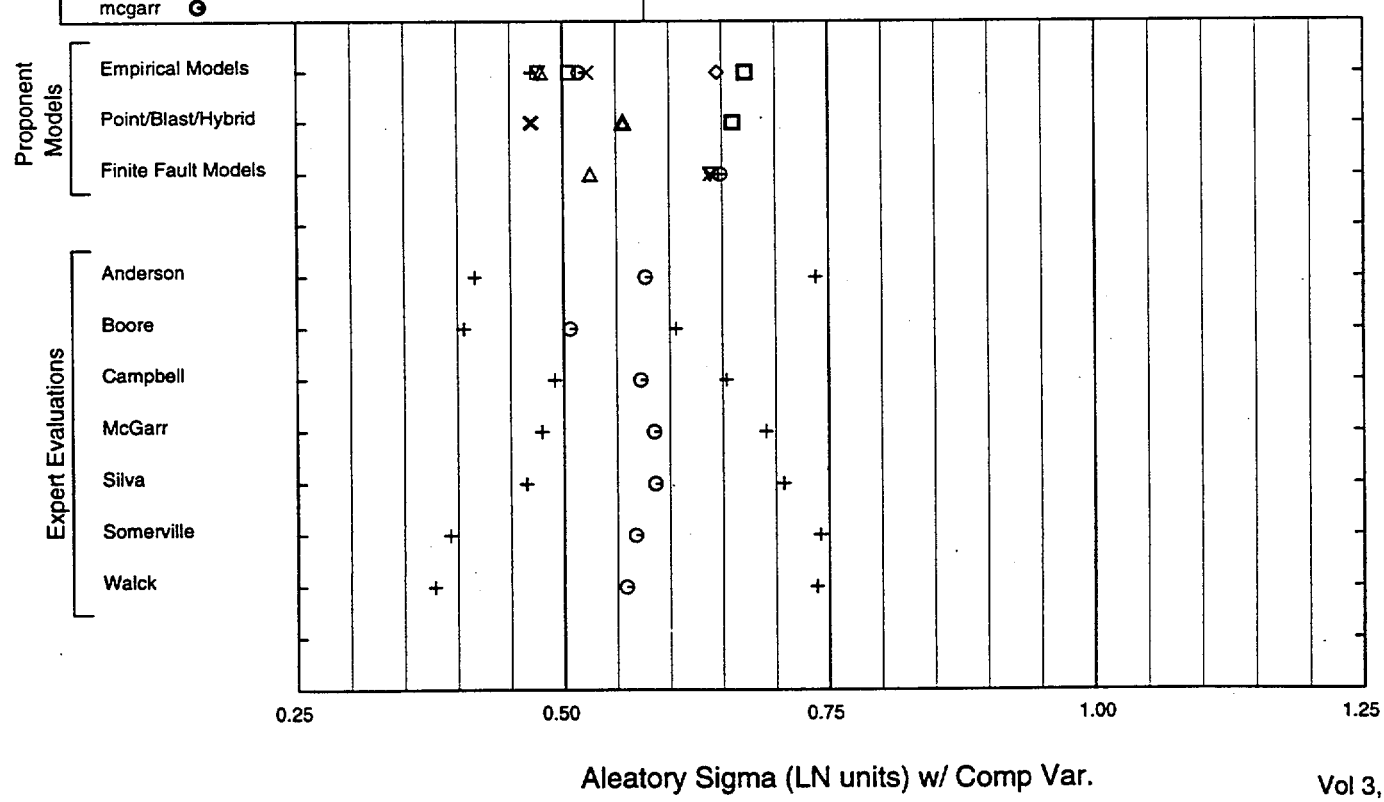
Aleatory Sigma (LN units) w/ Comp Var.

case 45, M= 7.0, shallow, xd= 50 km, SS, 10 Hz, HOR, 6/5/97, Rev 1

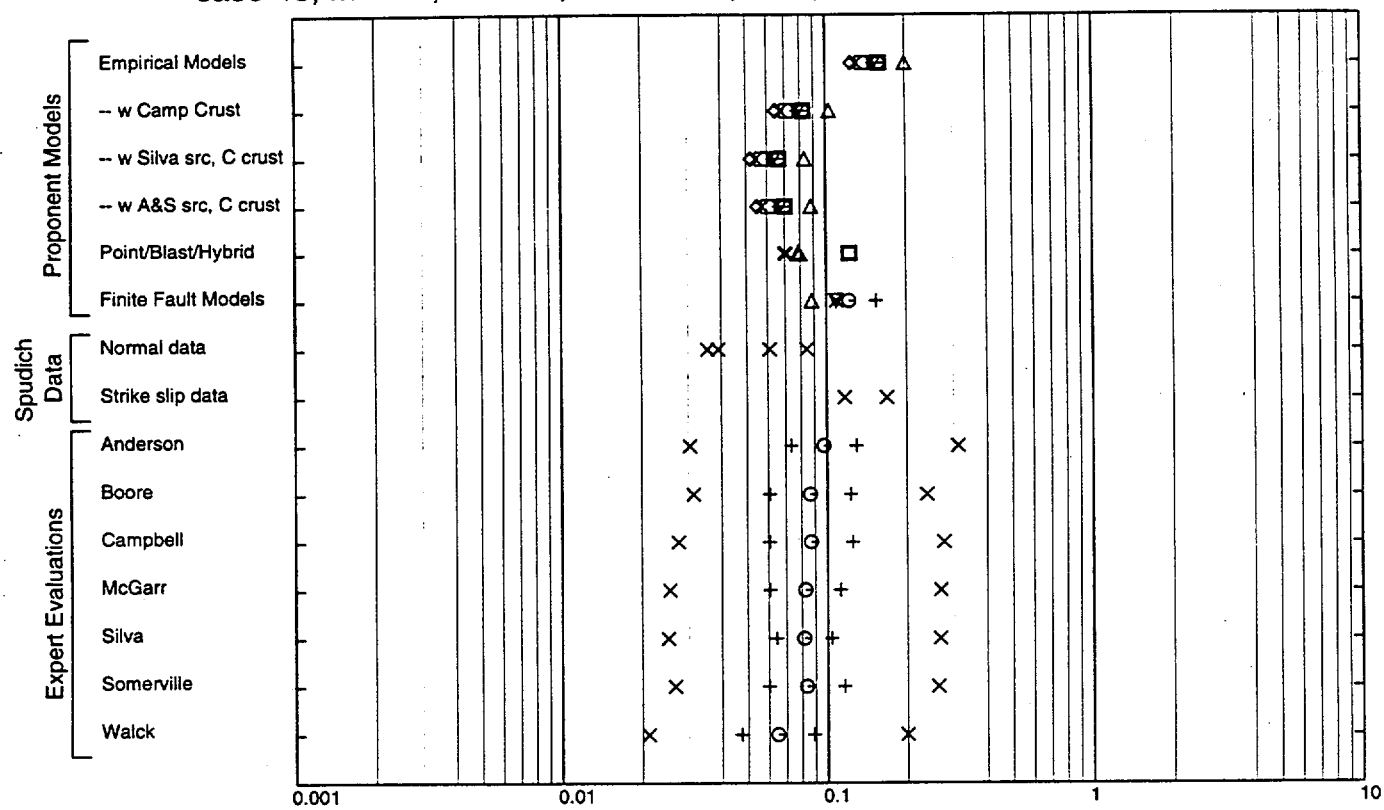


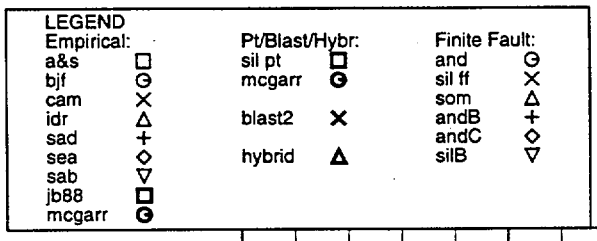
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

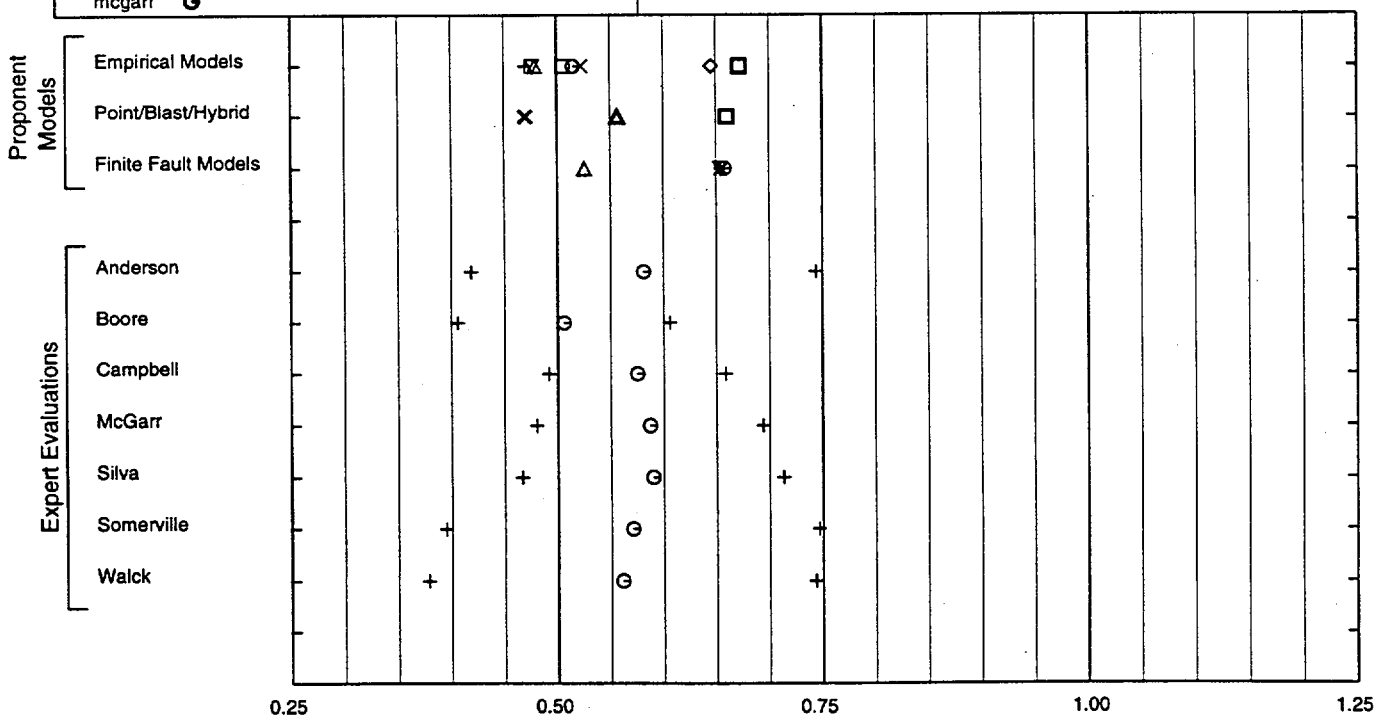


case 46, M= 7.0, shallow, xd= 50 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



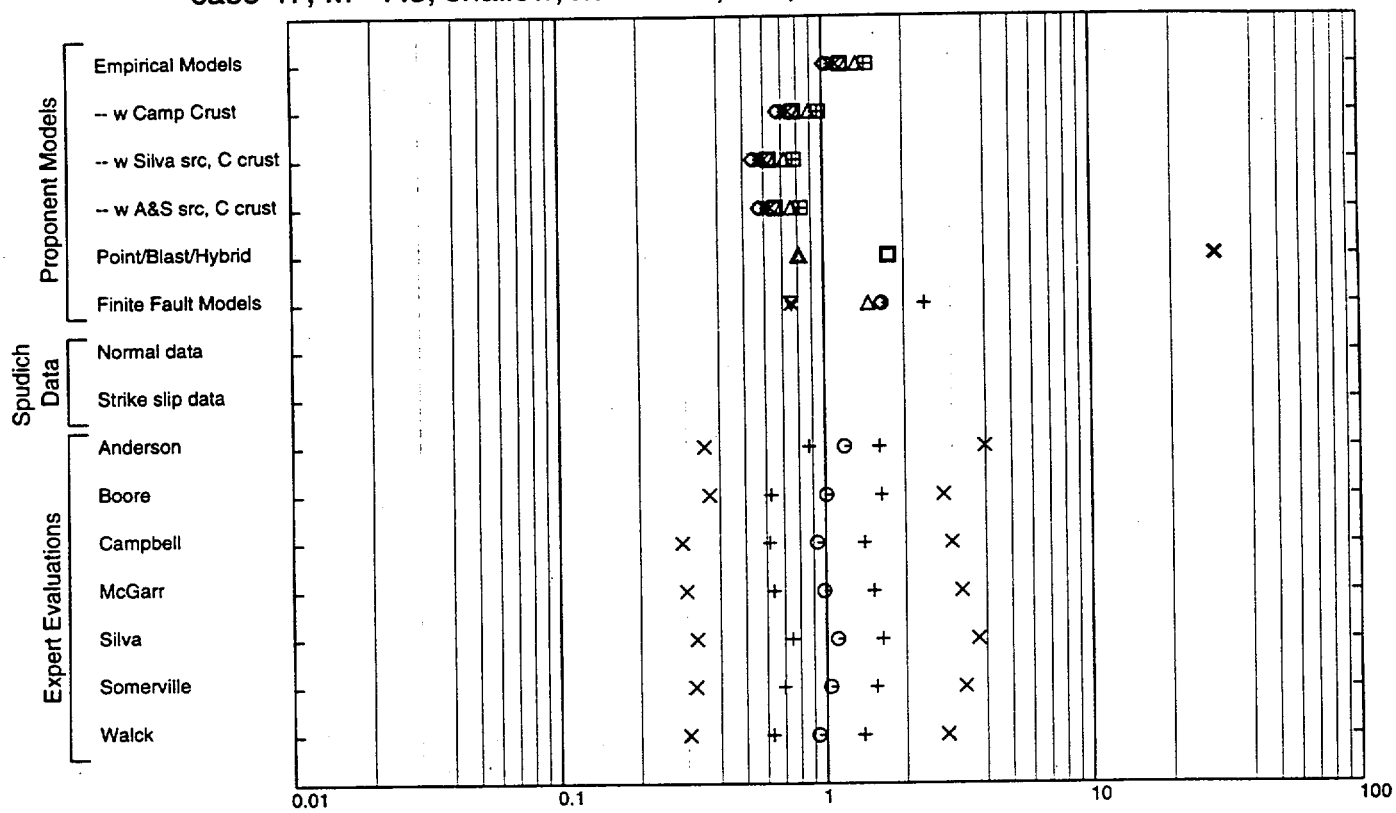


Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

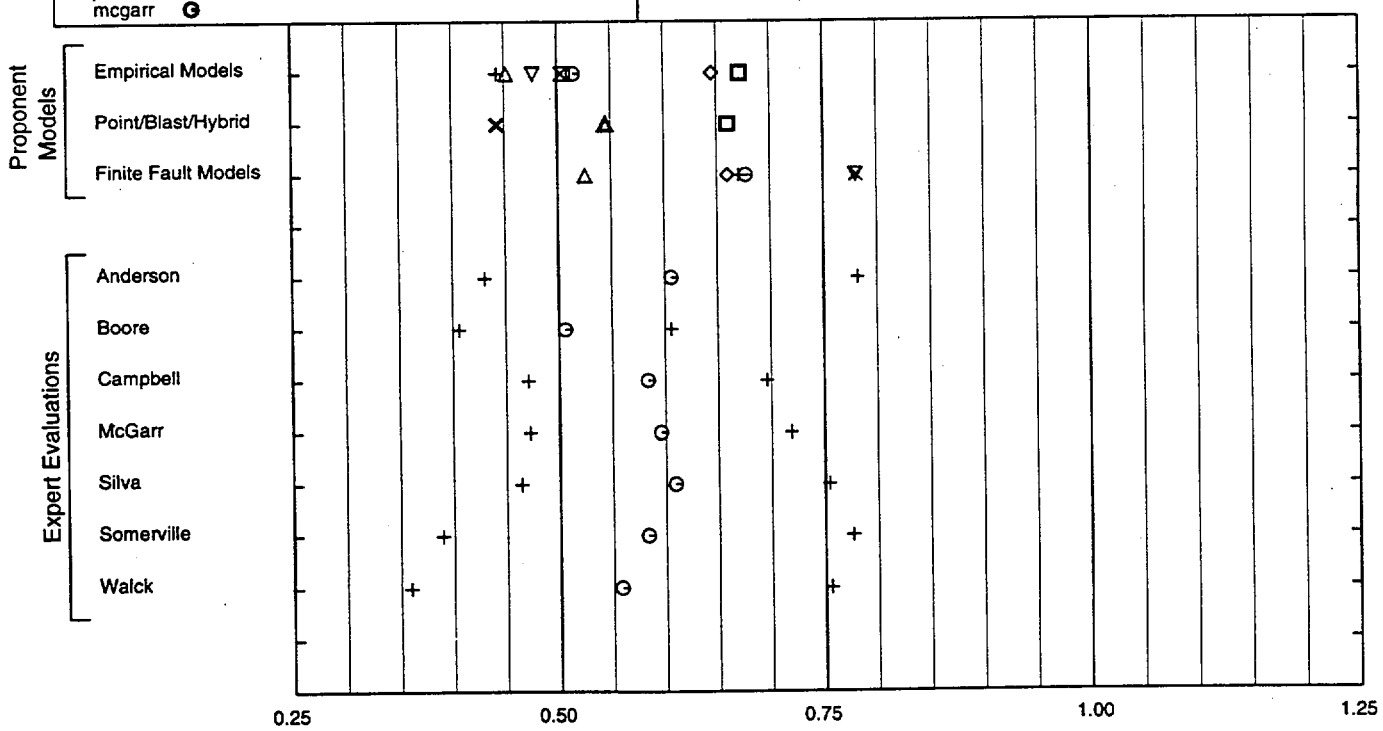
case 47, M= 7.5, shallow, xd= 1 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

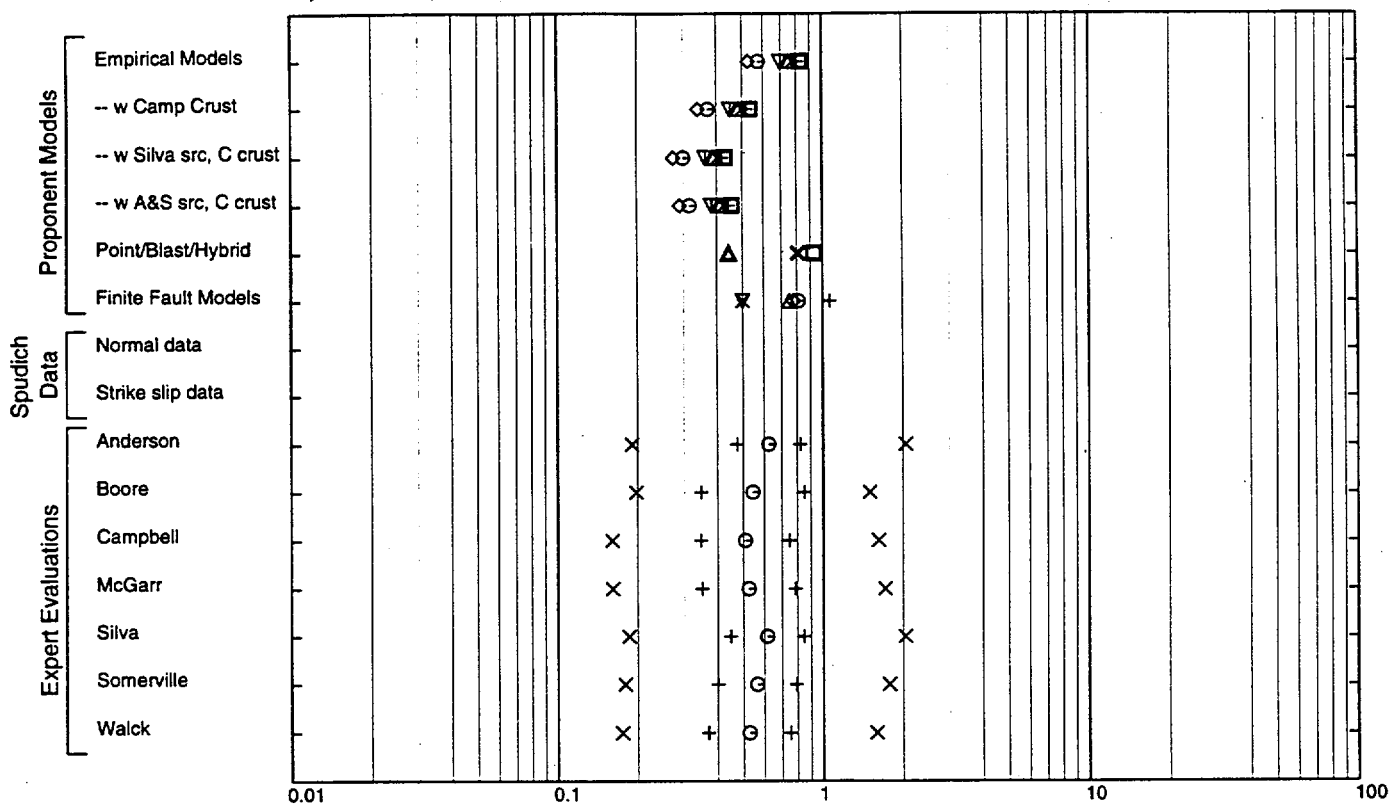
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

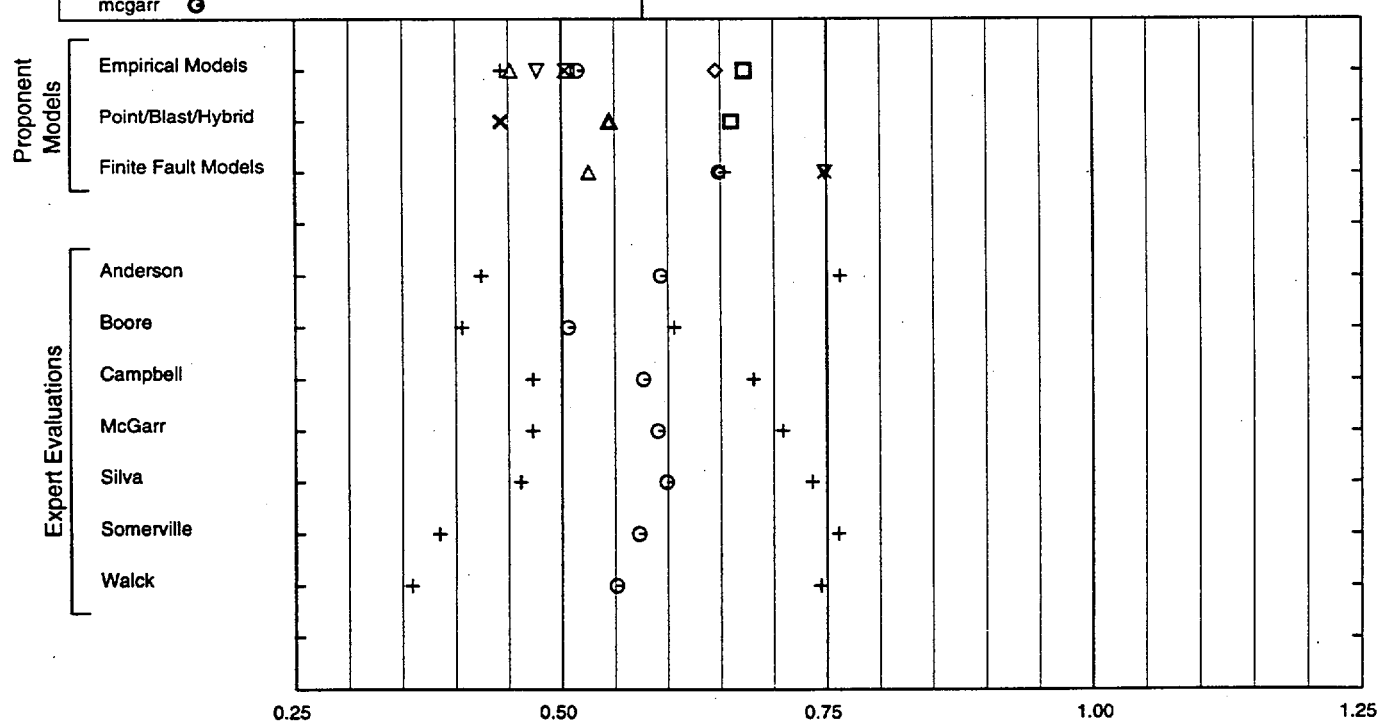
case 48, M= 7.5, shallow, xd= 10 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

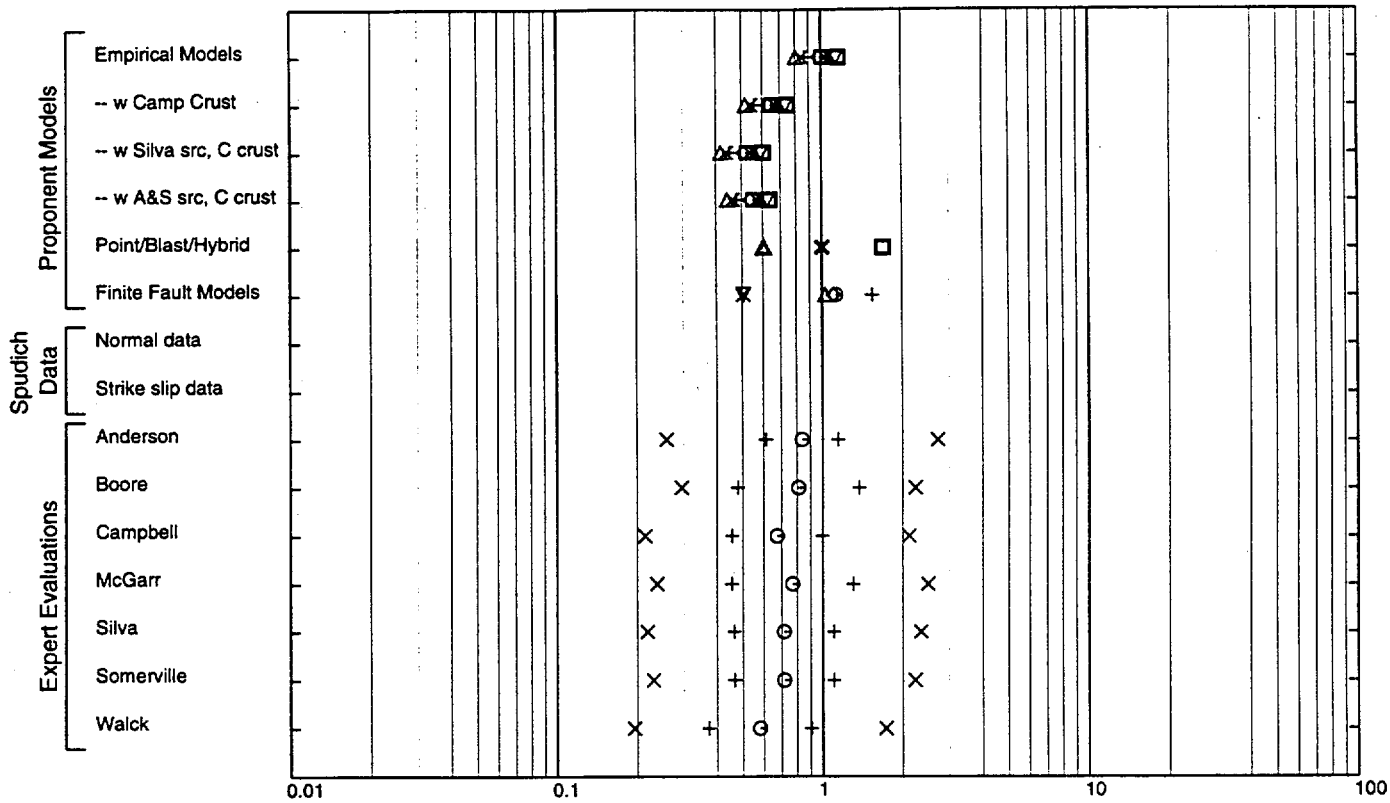
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

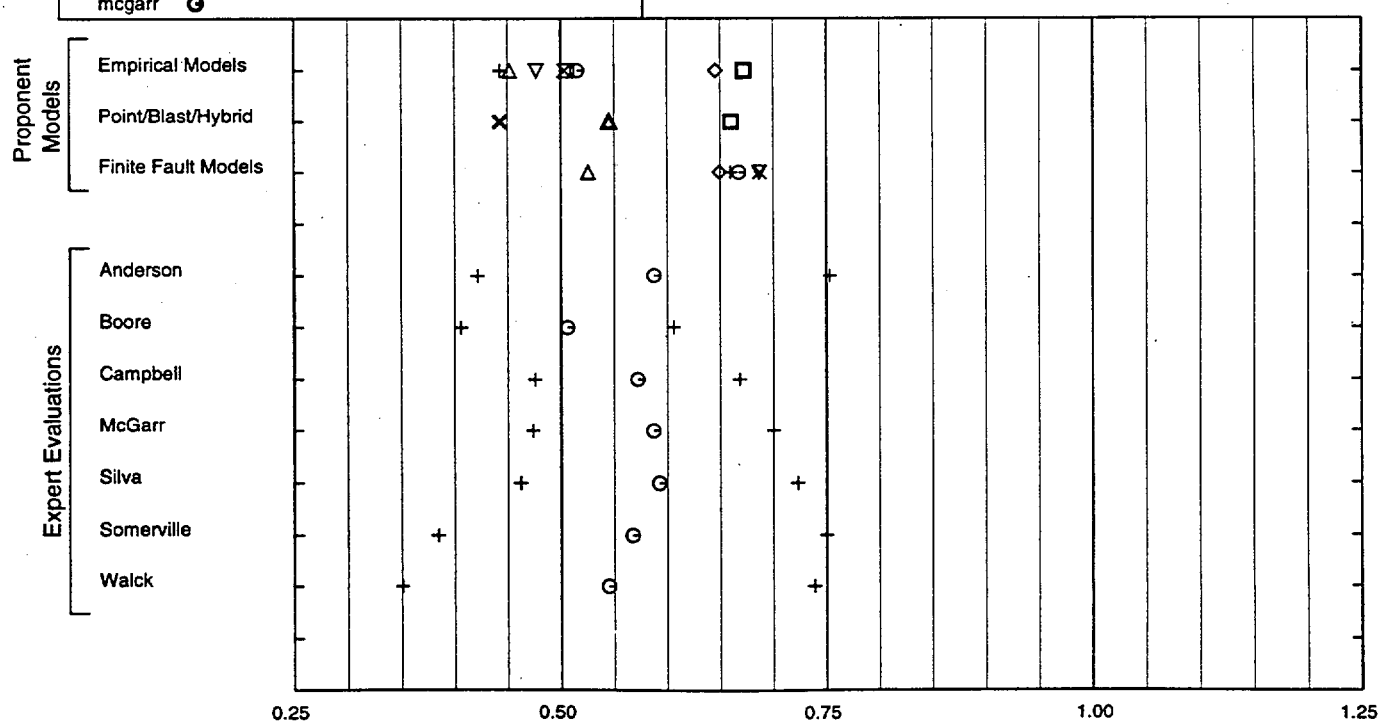
case 49, M= 7.5, shallow, xd= 10 km, HW, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

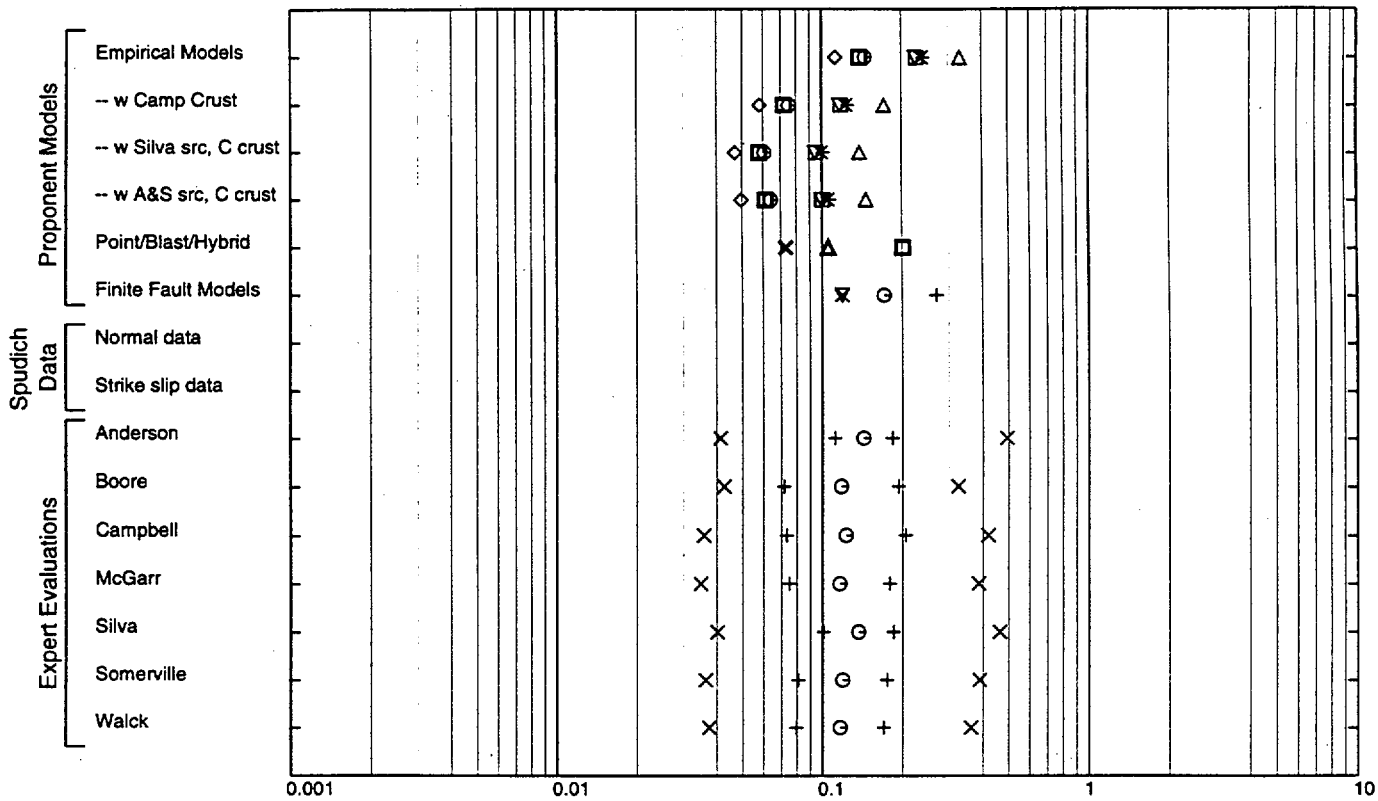
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

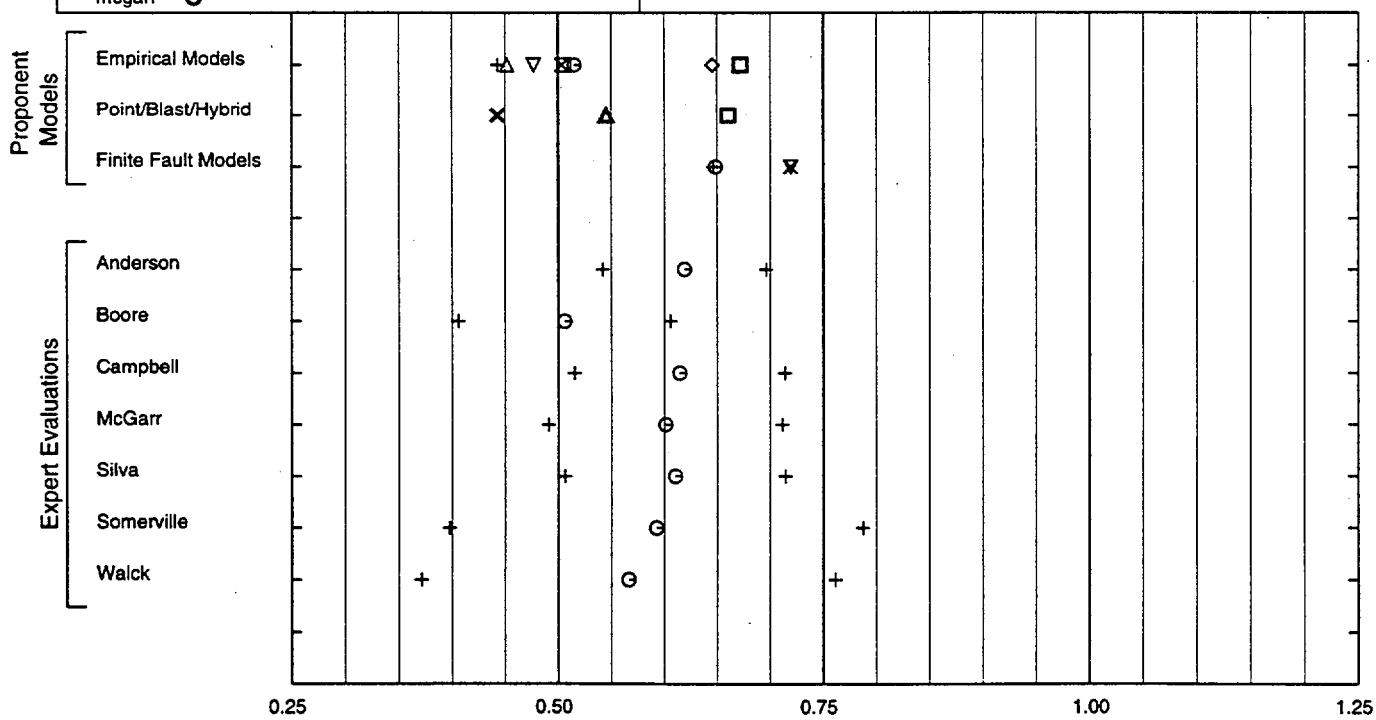
case 50, M= 8.0, shallow, xd= 50 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

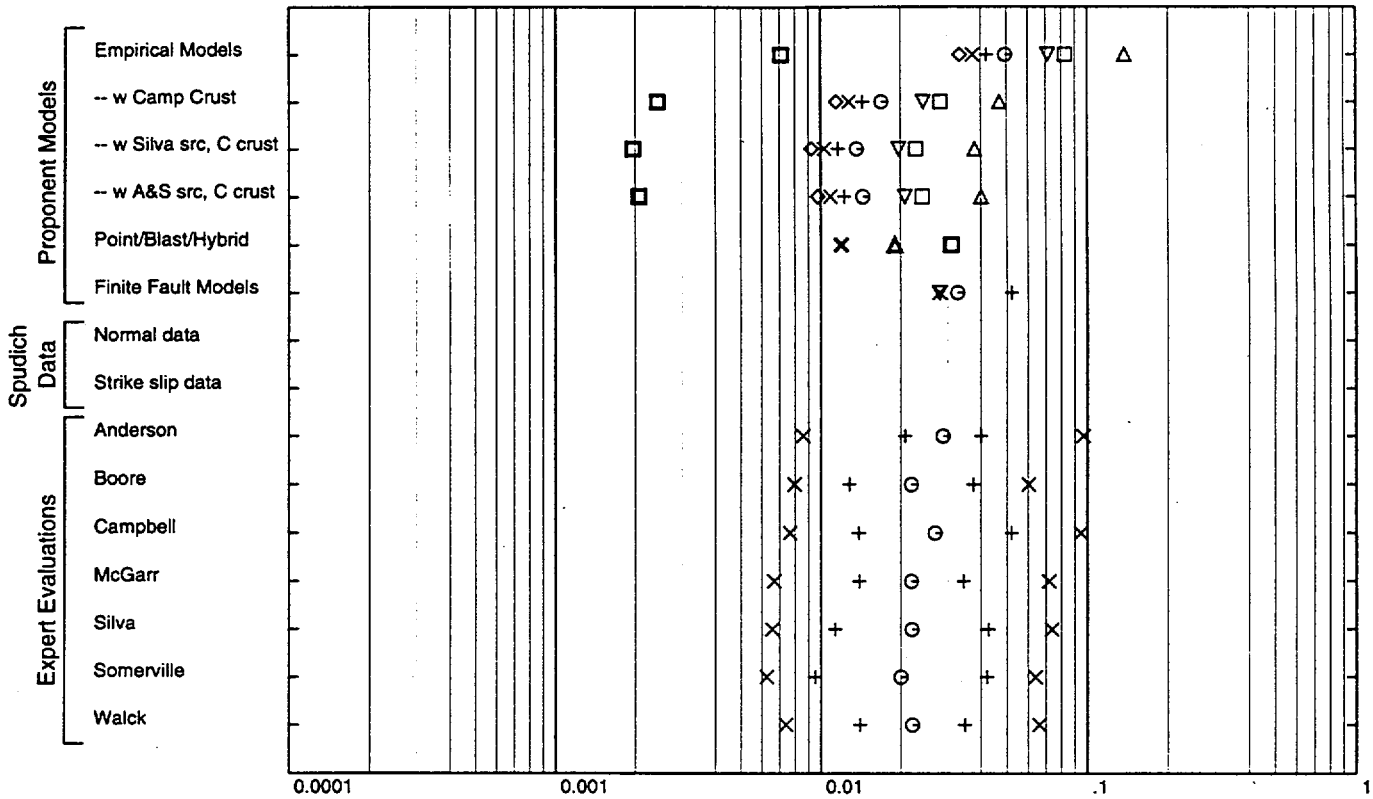
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

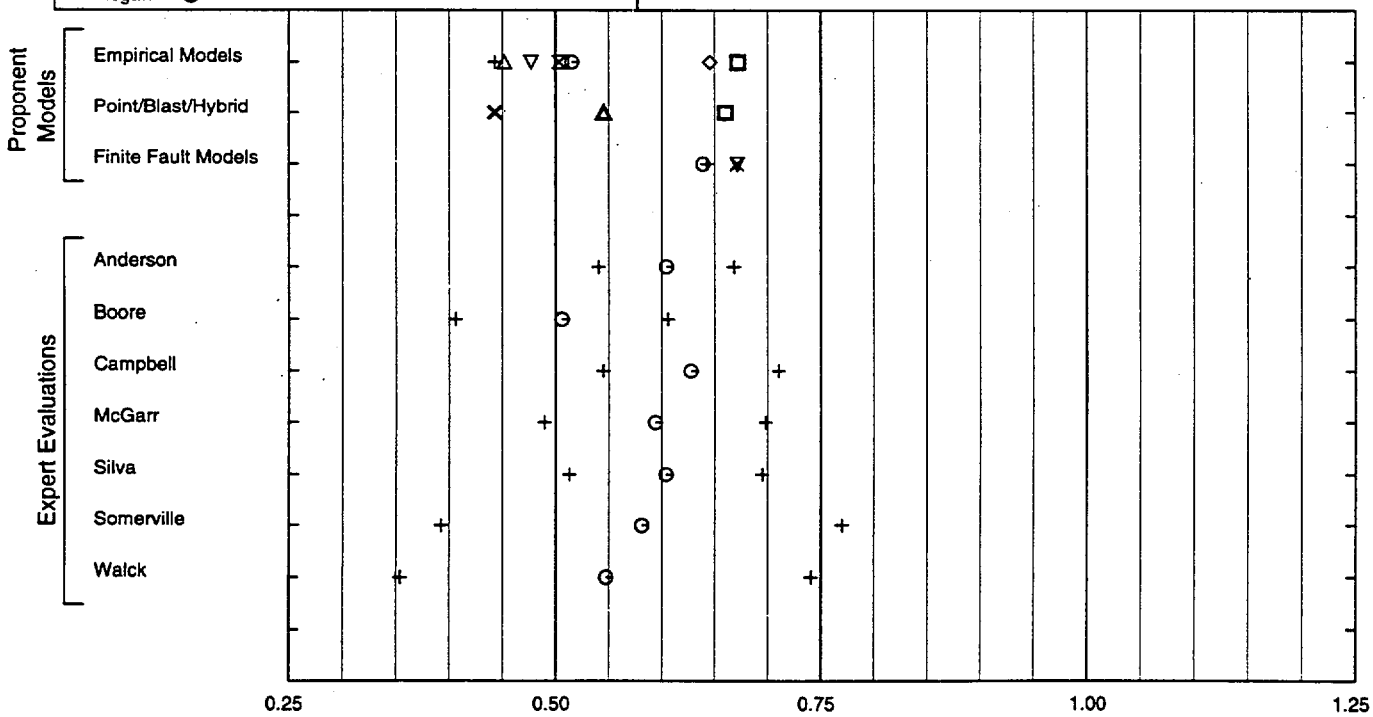
case 51, M= 8.0, shallow, xd=160 km, SS, 10 Hz, HOR, 6/5/97, Rev 1



LEGEND

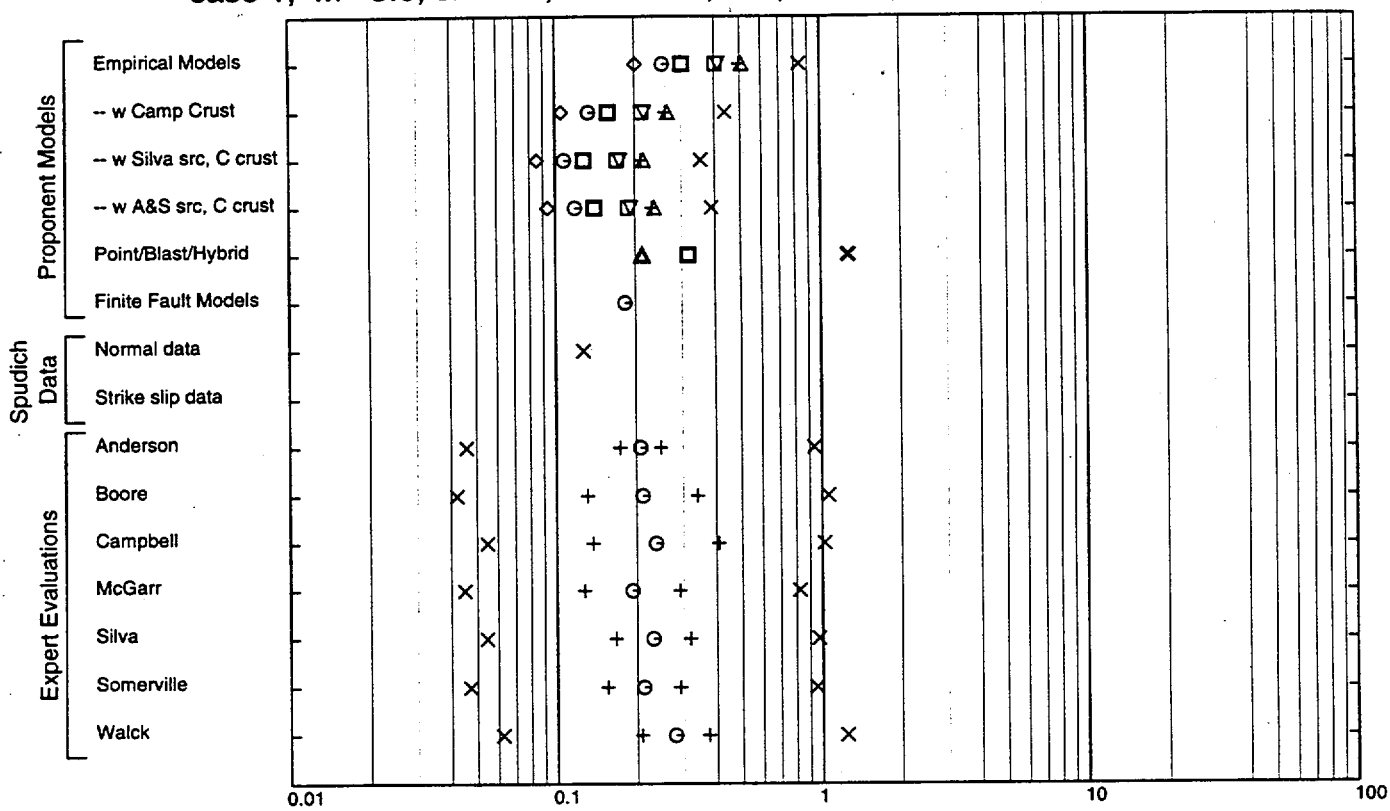
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

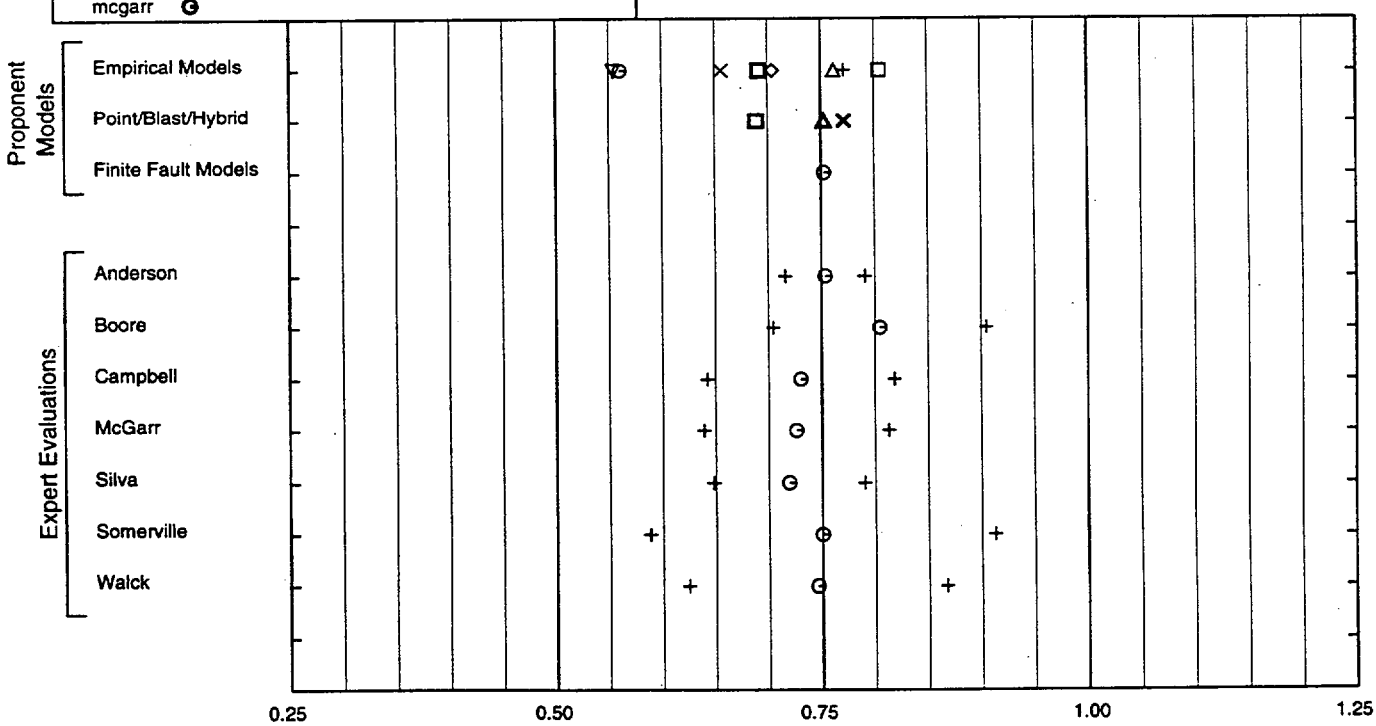
case 1, M= 5.0, shallow, xd= 1 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



LEGEND

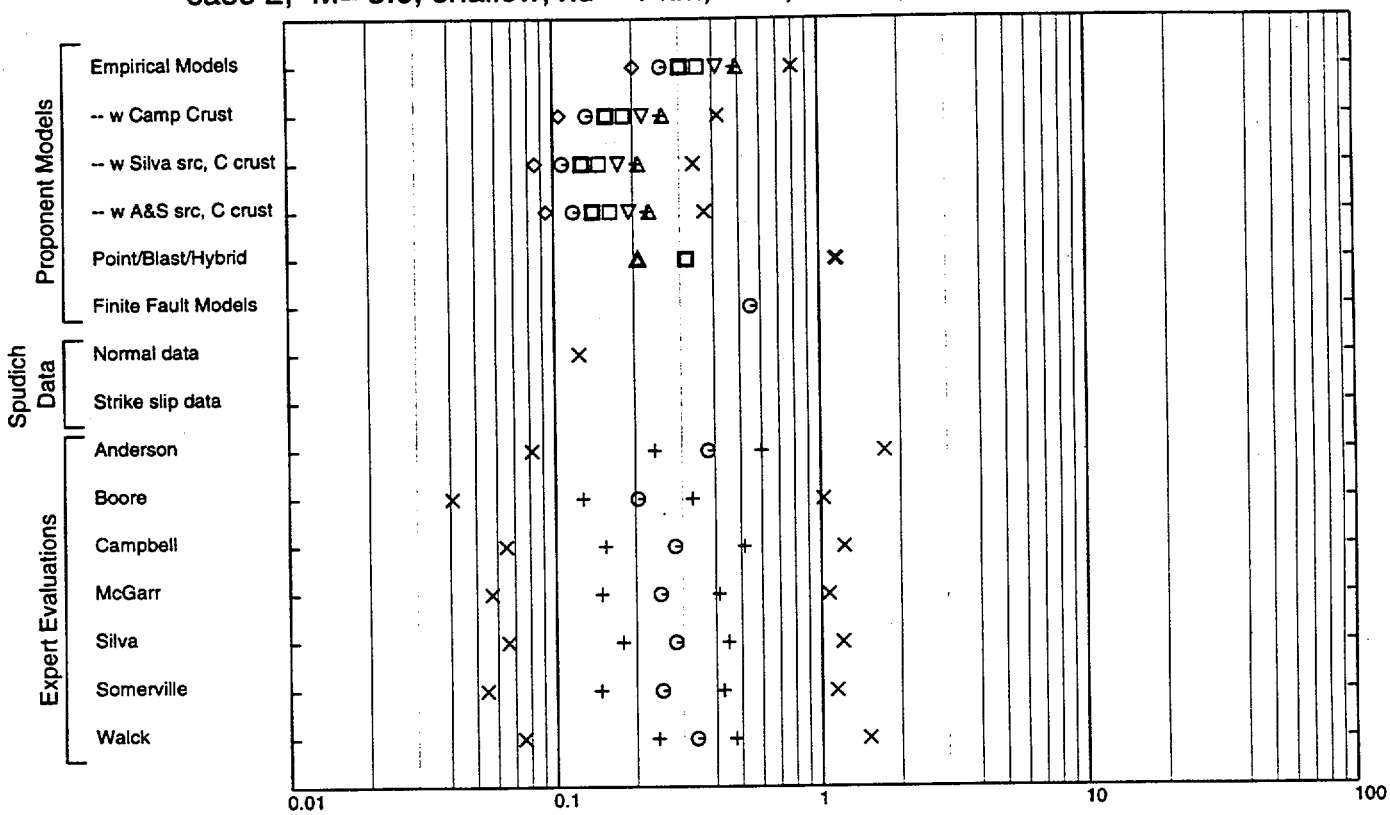
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

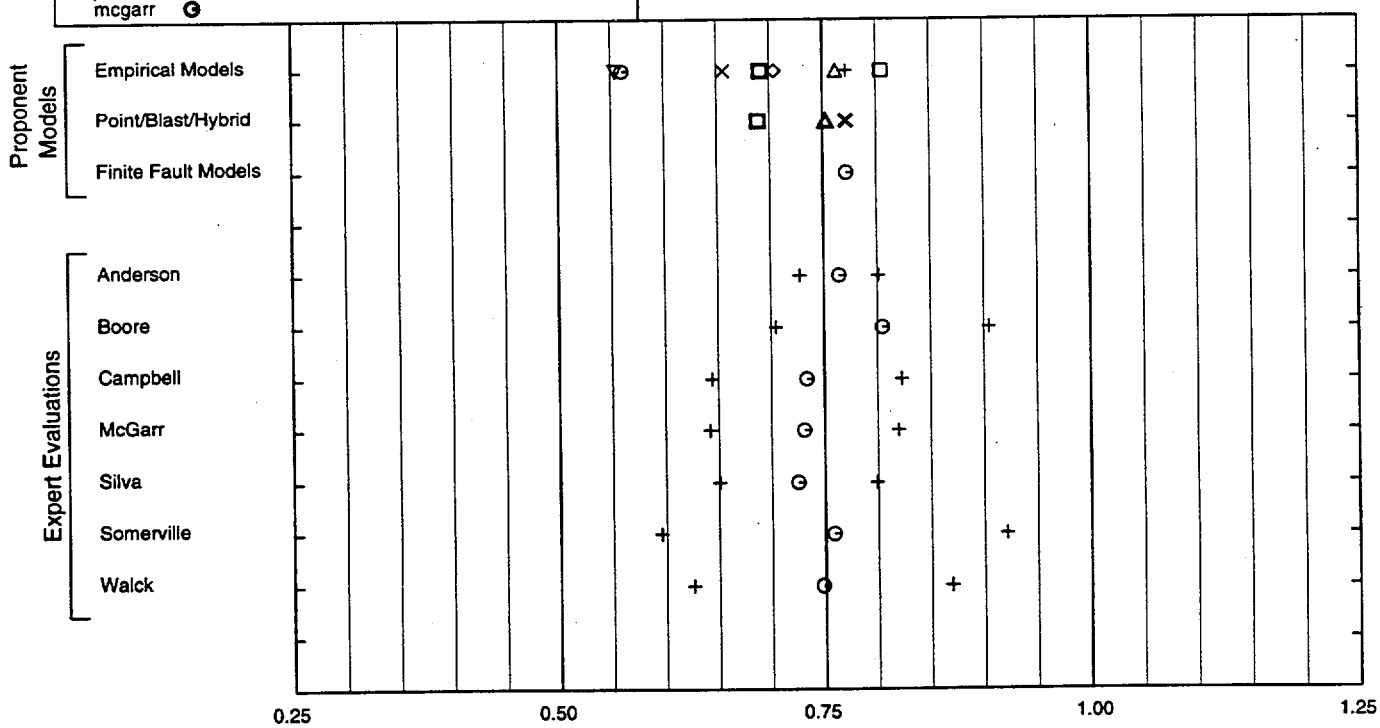
case 2, M= 5.0, shallow, xd= 1 km, HW, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

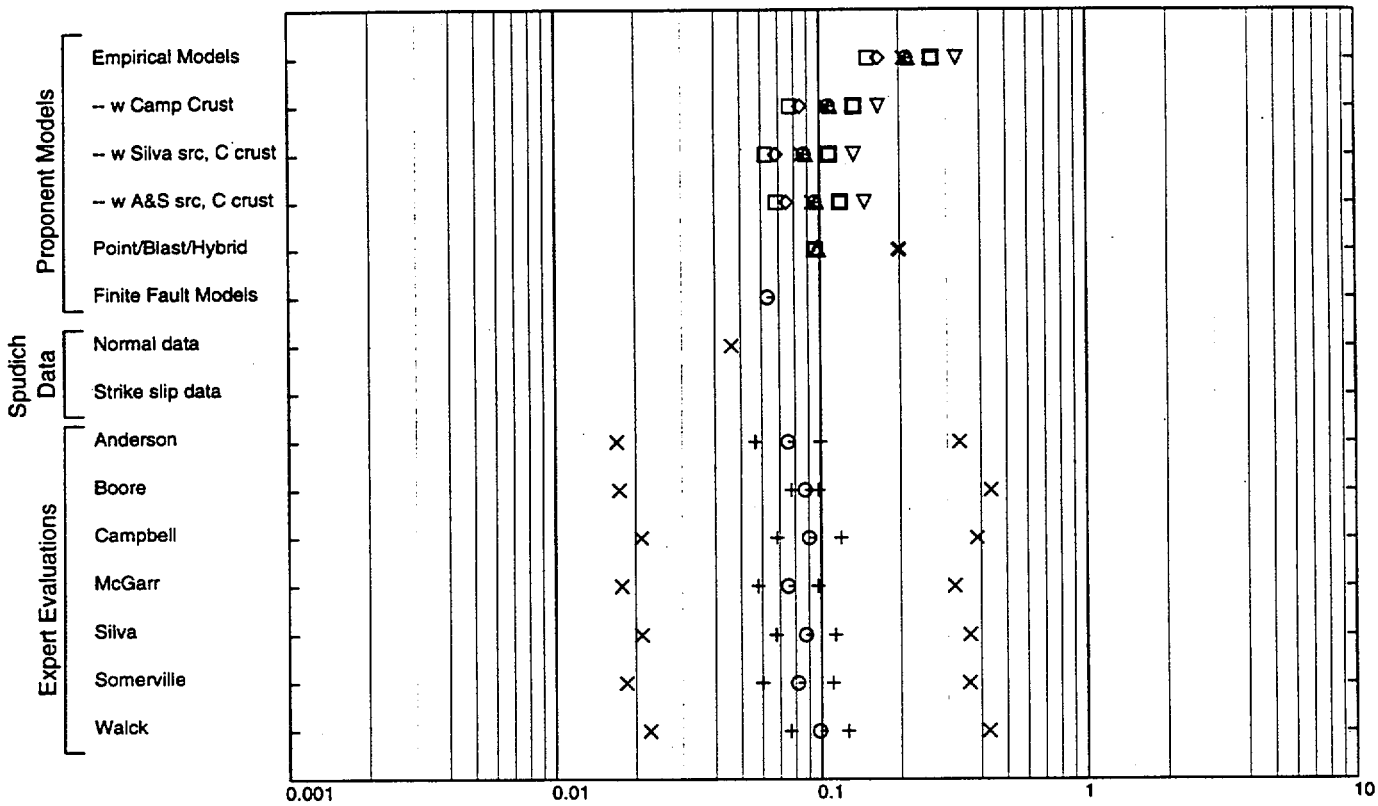
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

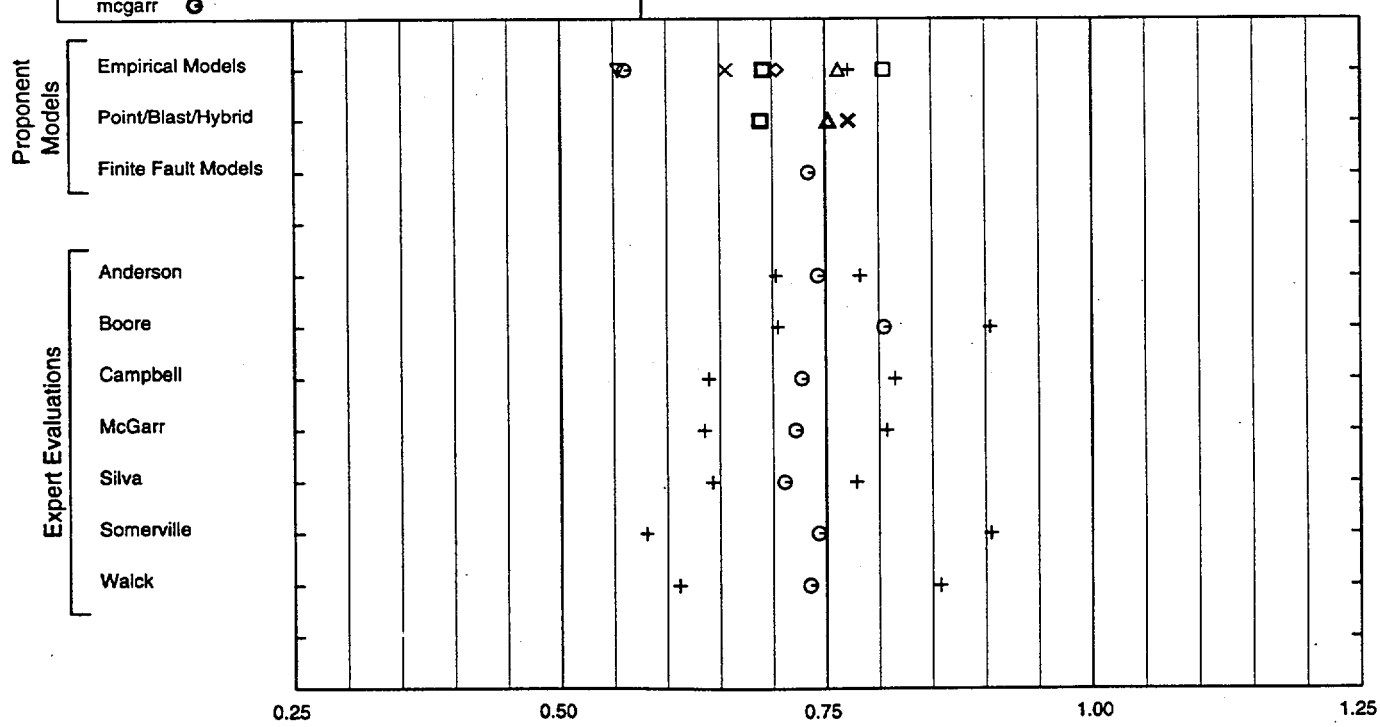
case 3, M= 5.0, deep, xd= 5 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



LEGEND

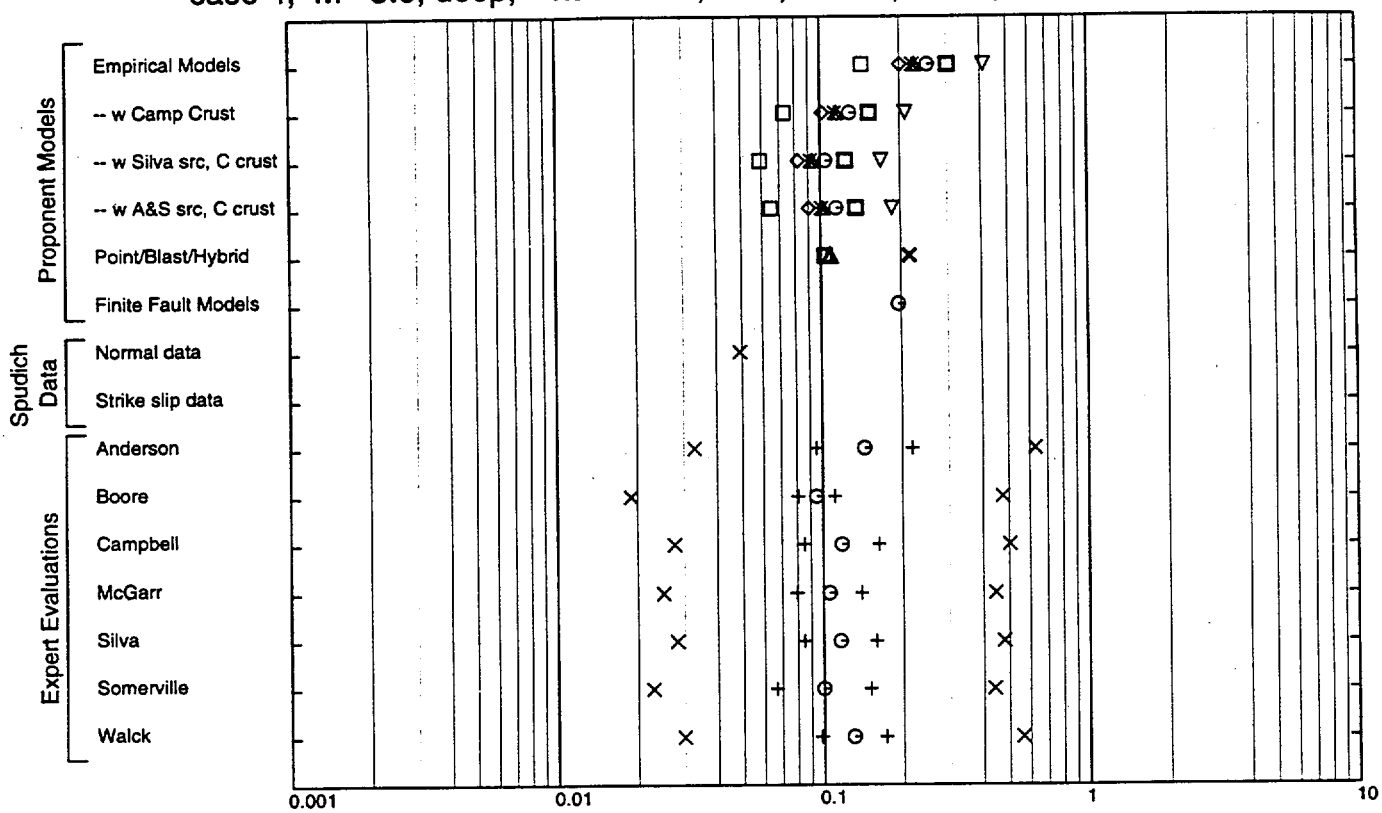
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

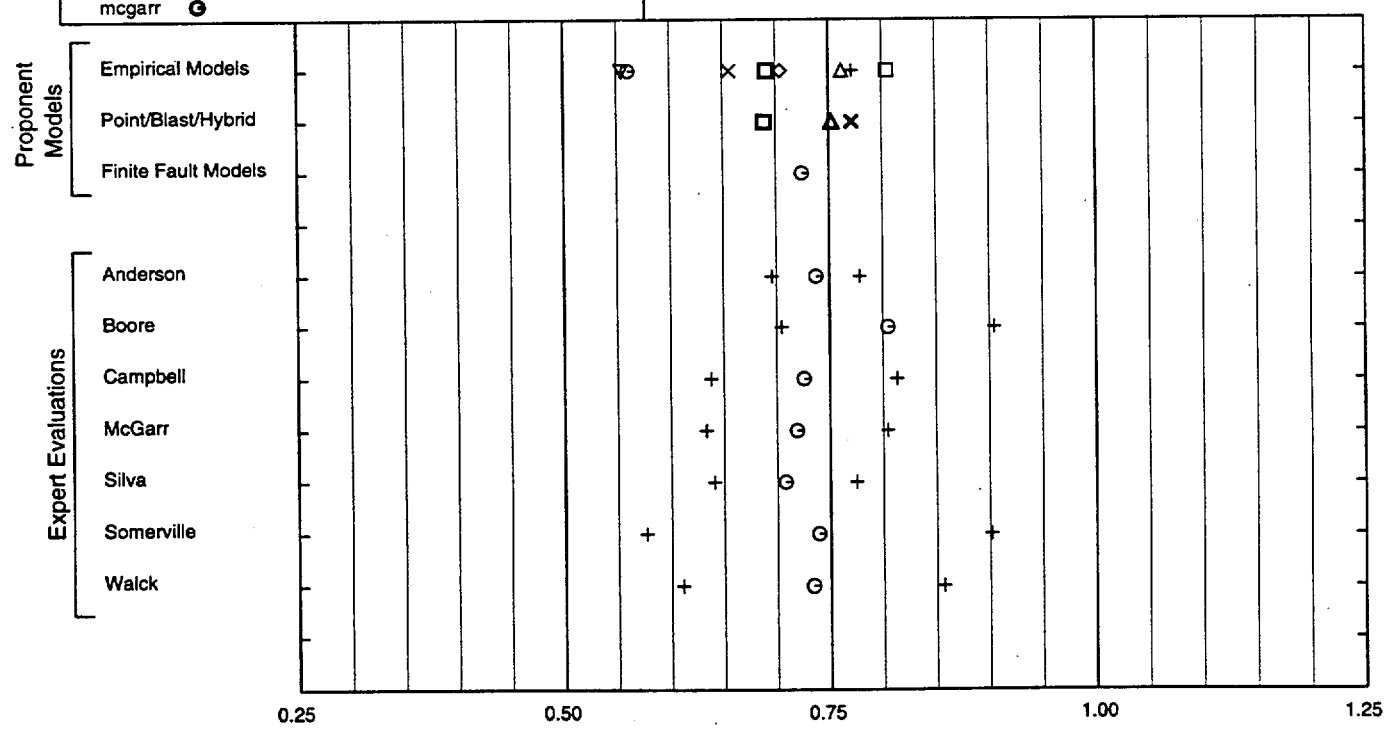
case 4, M= 5.0, deep, xd= 5 km, HW, 5 Hz, HOR, 6/5/97, Rev 1



LEGEND

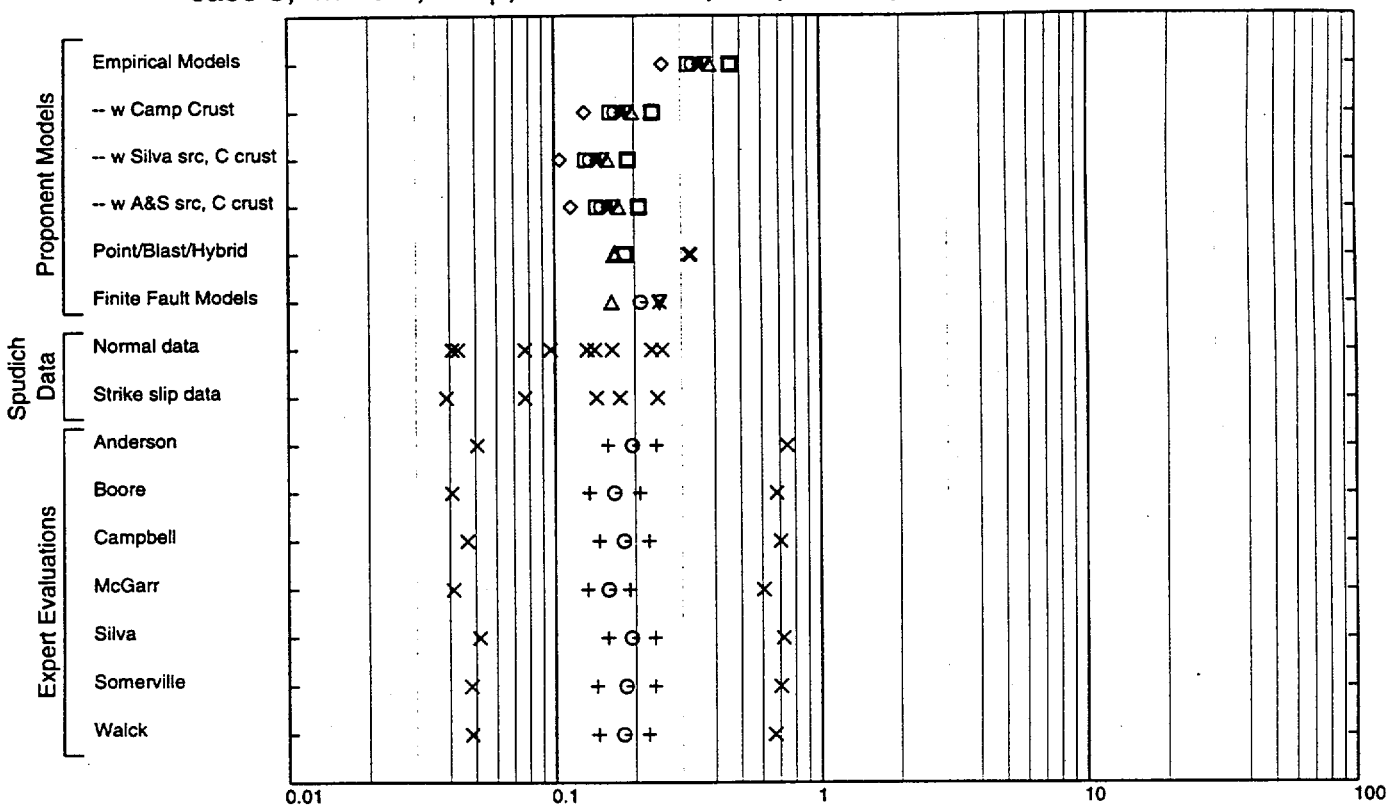
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

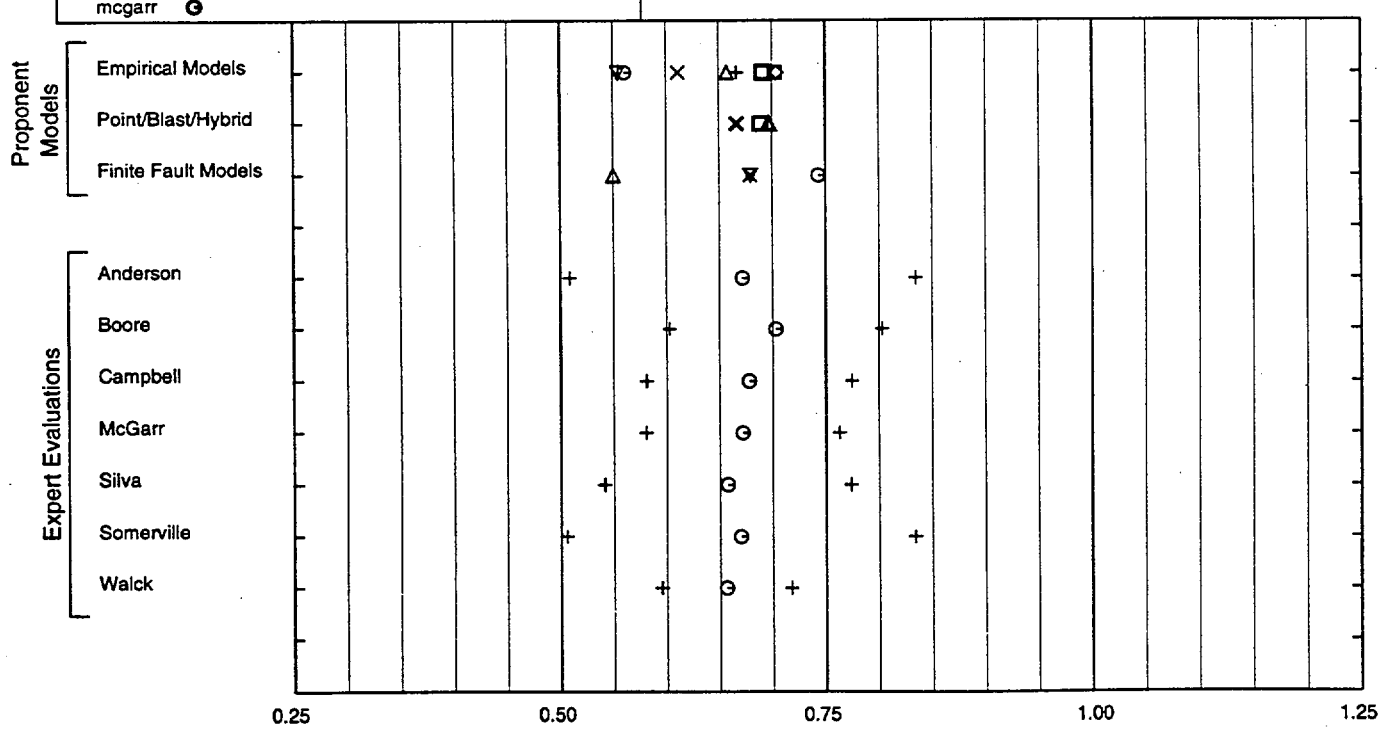
case 5, M= 5.8, deep, xd= 10 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

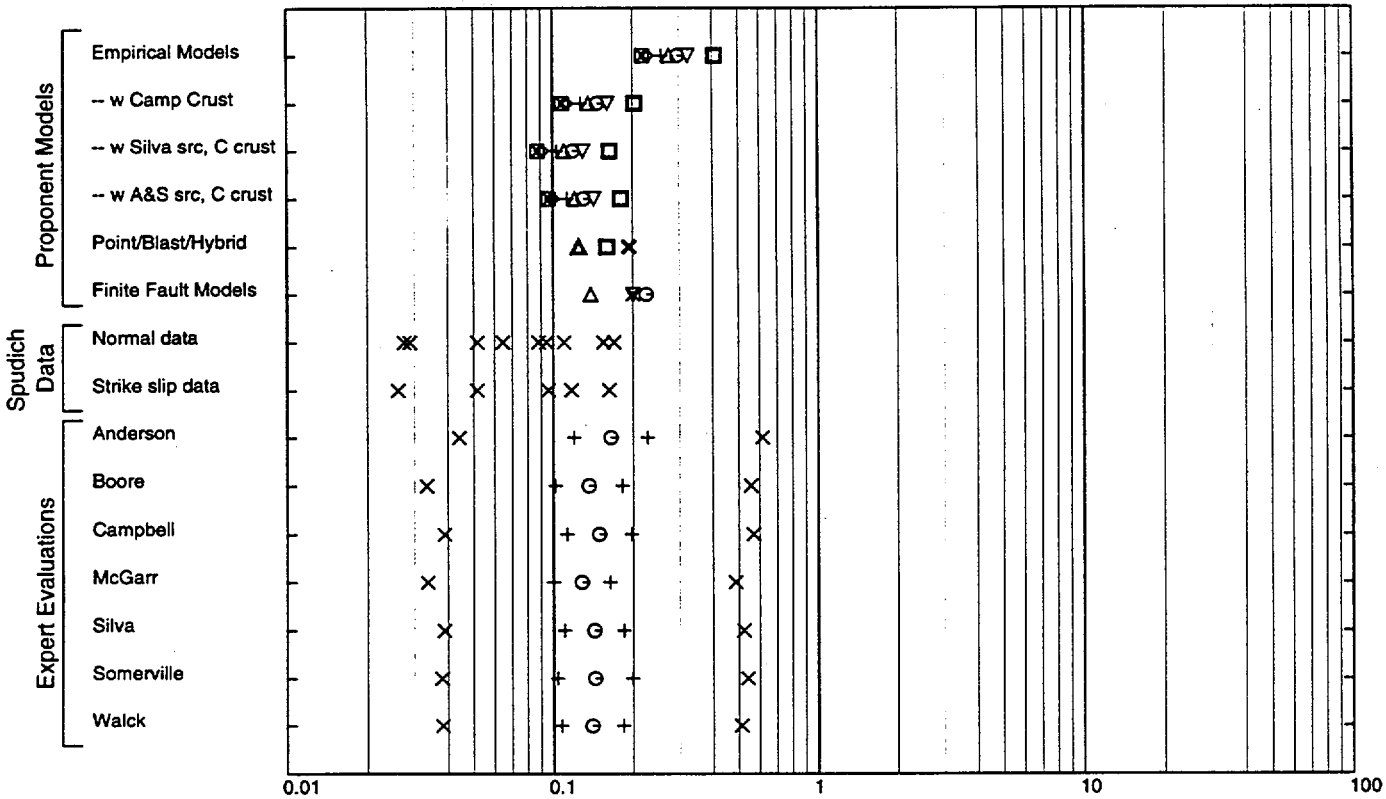
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

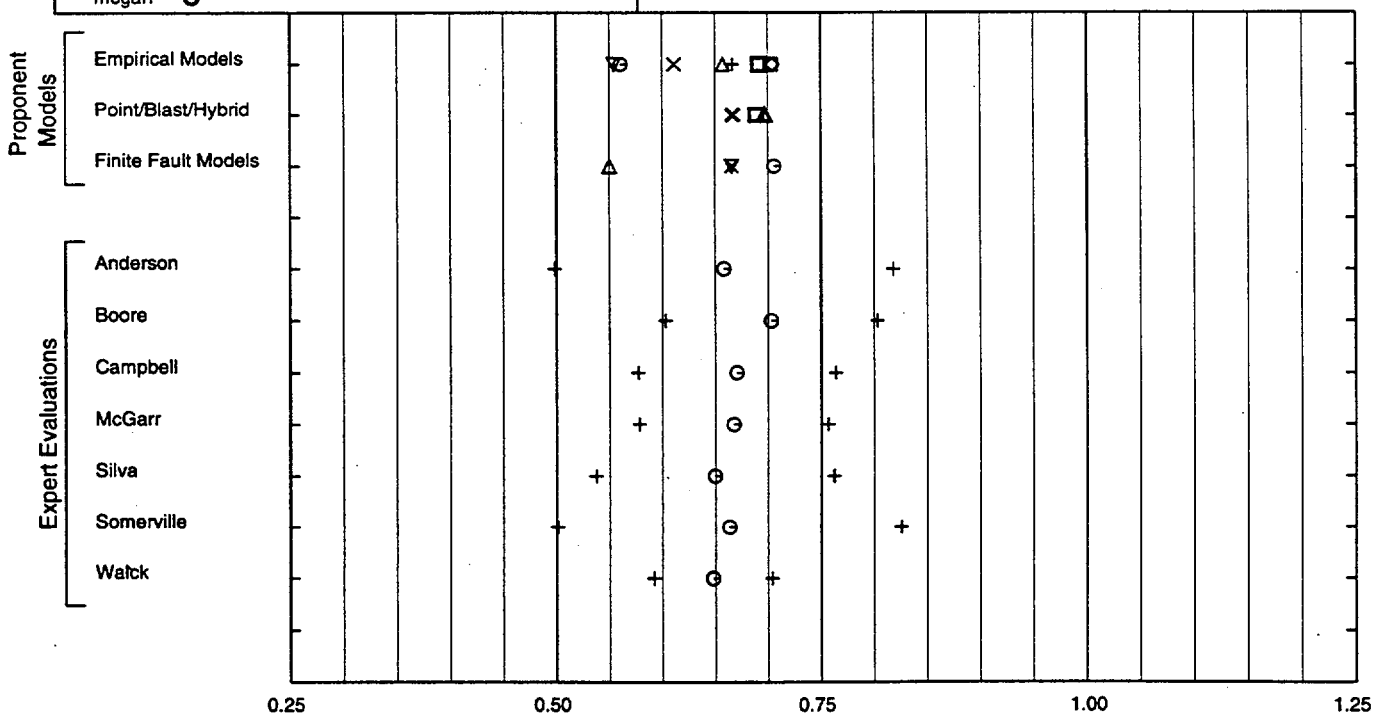
case 6, M= 5.8, deep, xd= 20 km, HW, 5 Hz, HOR, 6/5/97, Rev 1



LEGEND

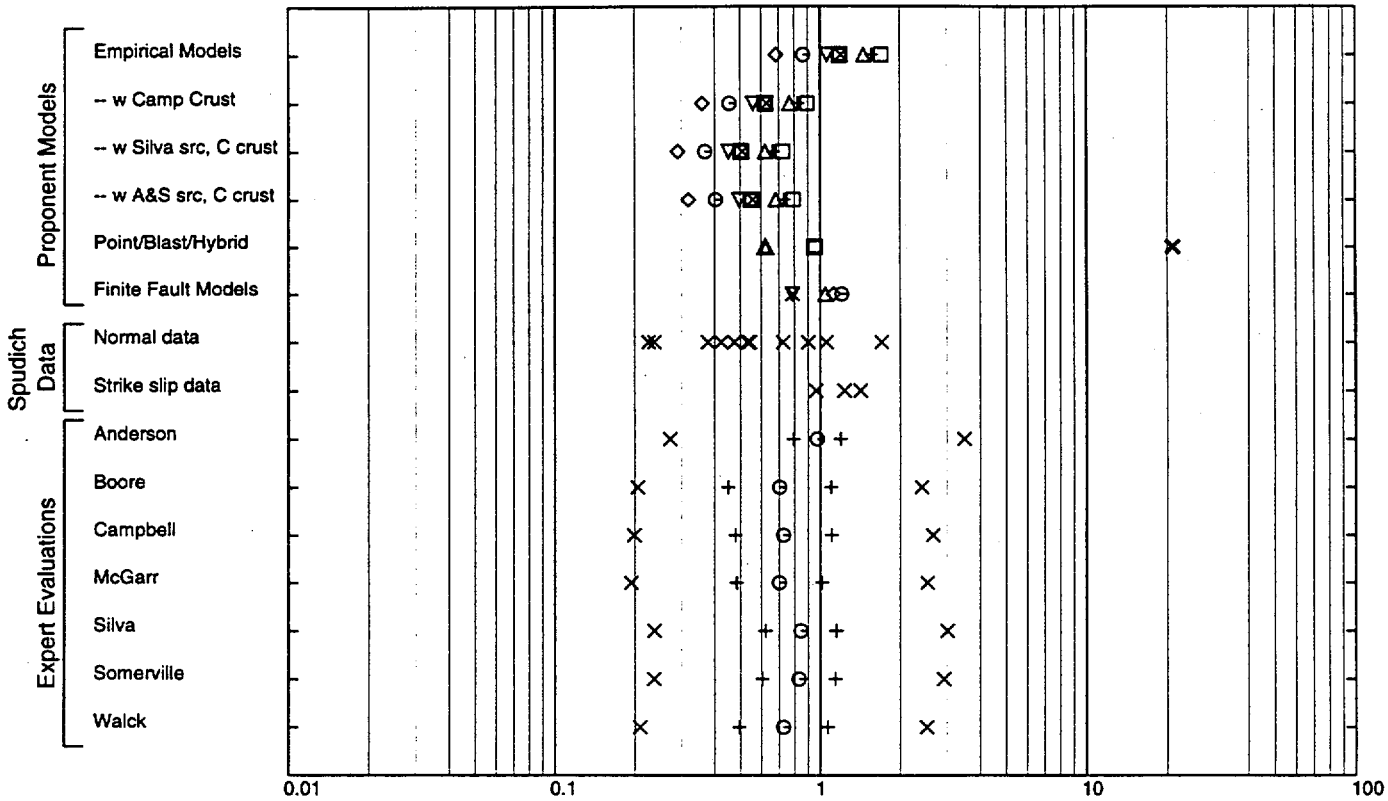
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

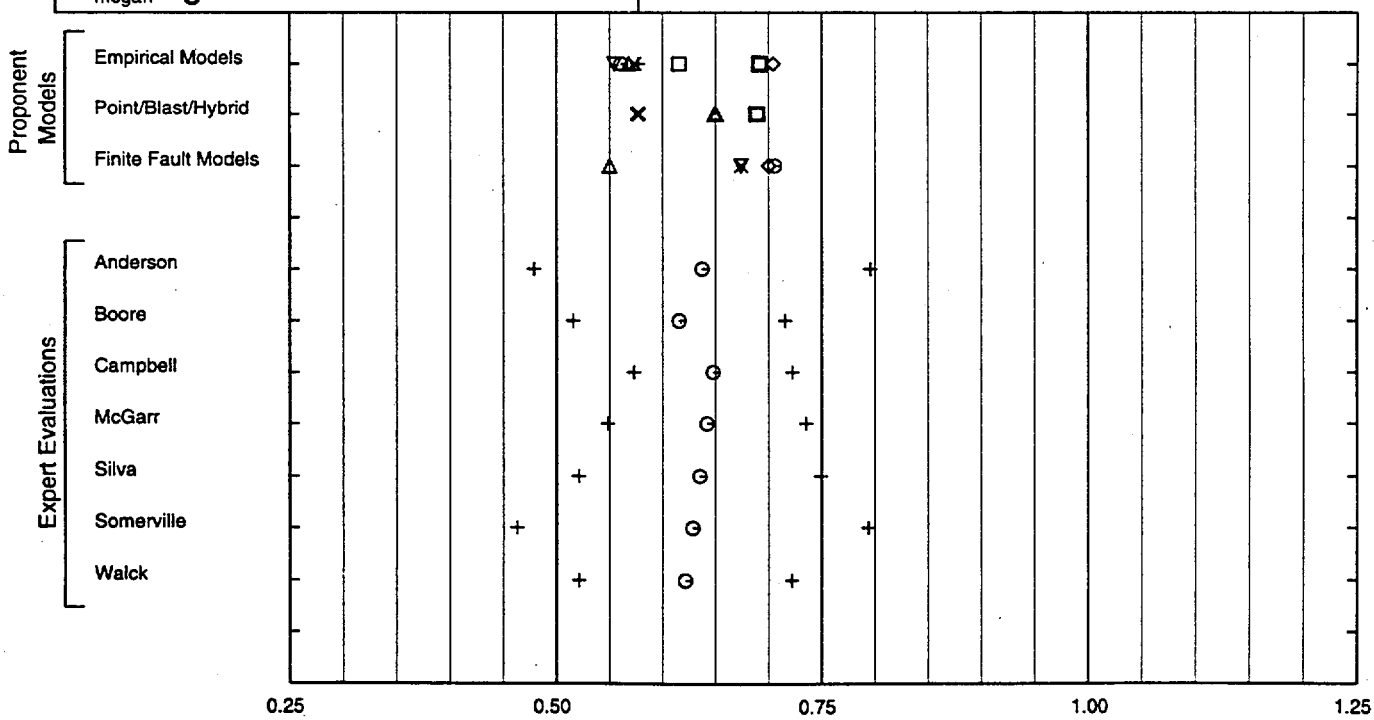
case 7, M= 6.5, shallow, xd= 1 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

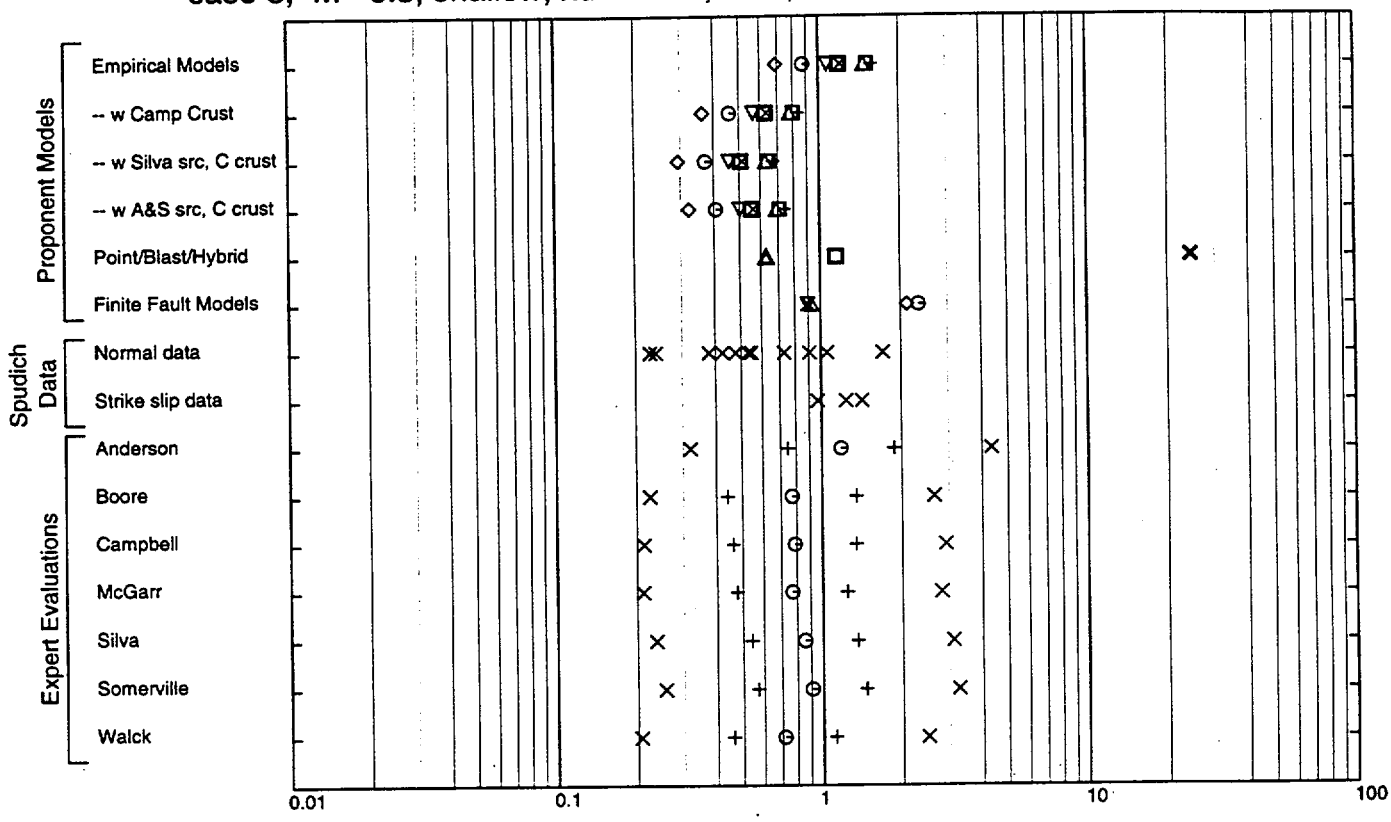
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊙	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊙				



Aleatory Sigma (LN units) w/ Comp Var.

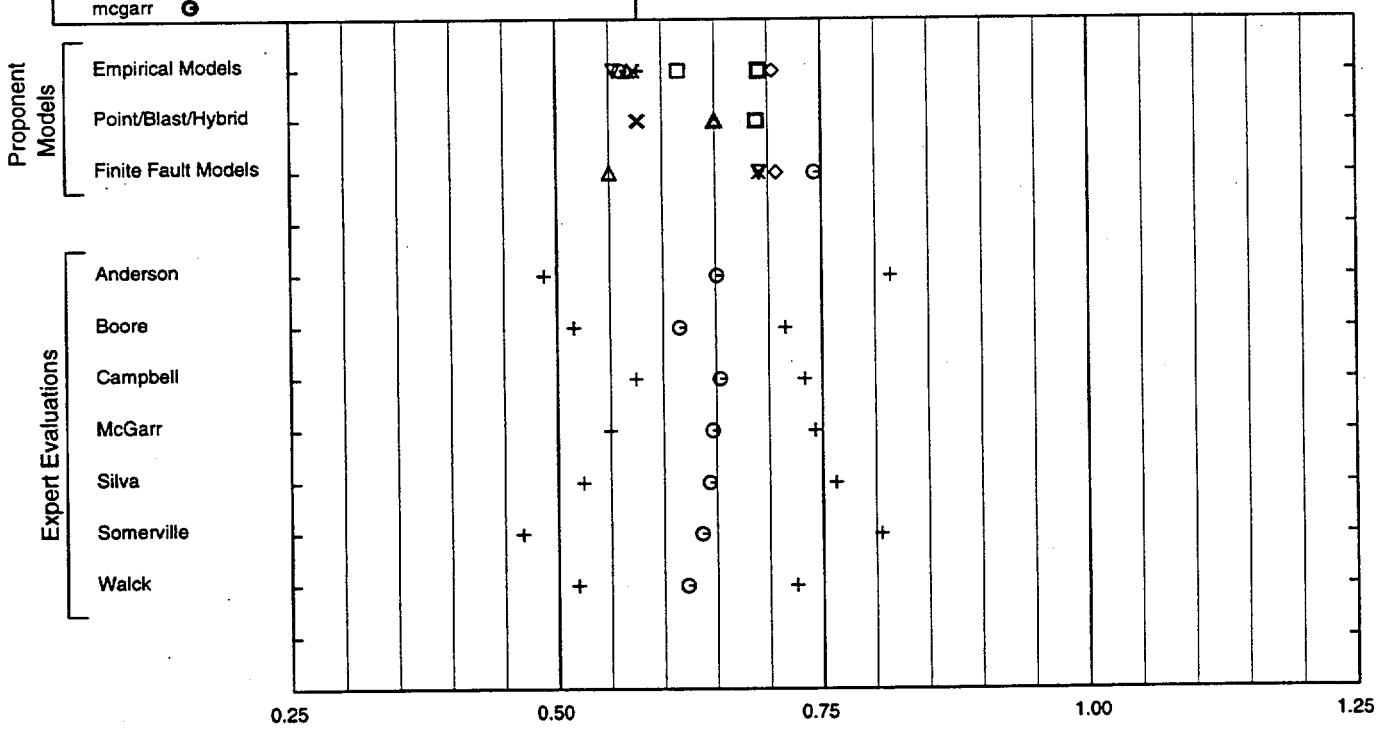
case 8, M= 6.5, shallow, xd= 1 km, HW, 5 Hz, HOR, 6/5/97, Rev 1



LEGEND

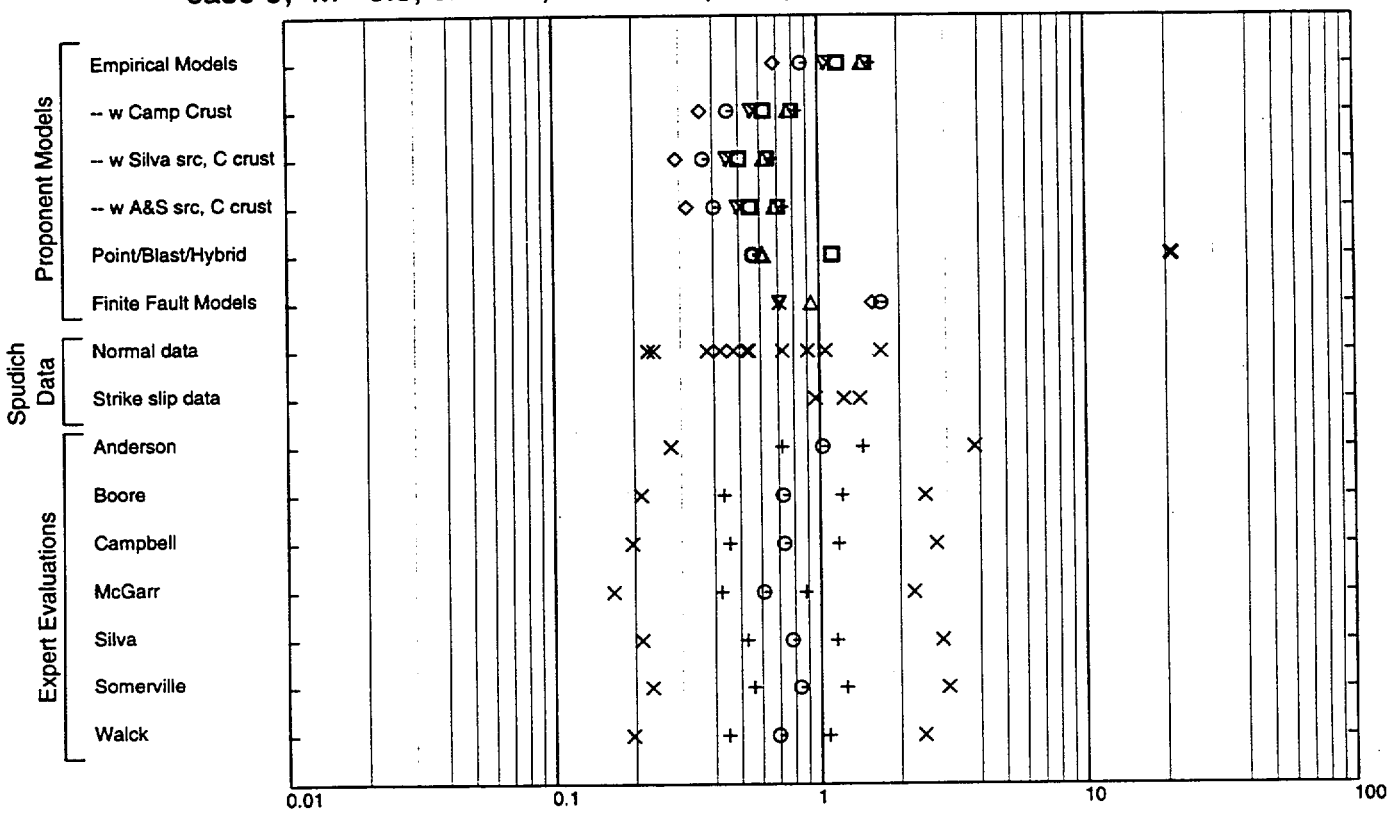
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

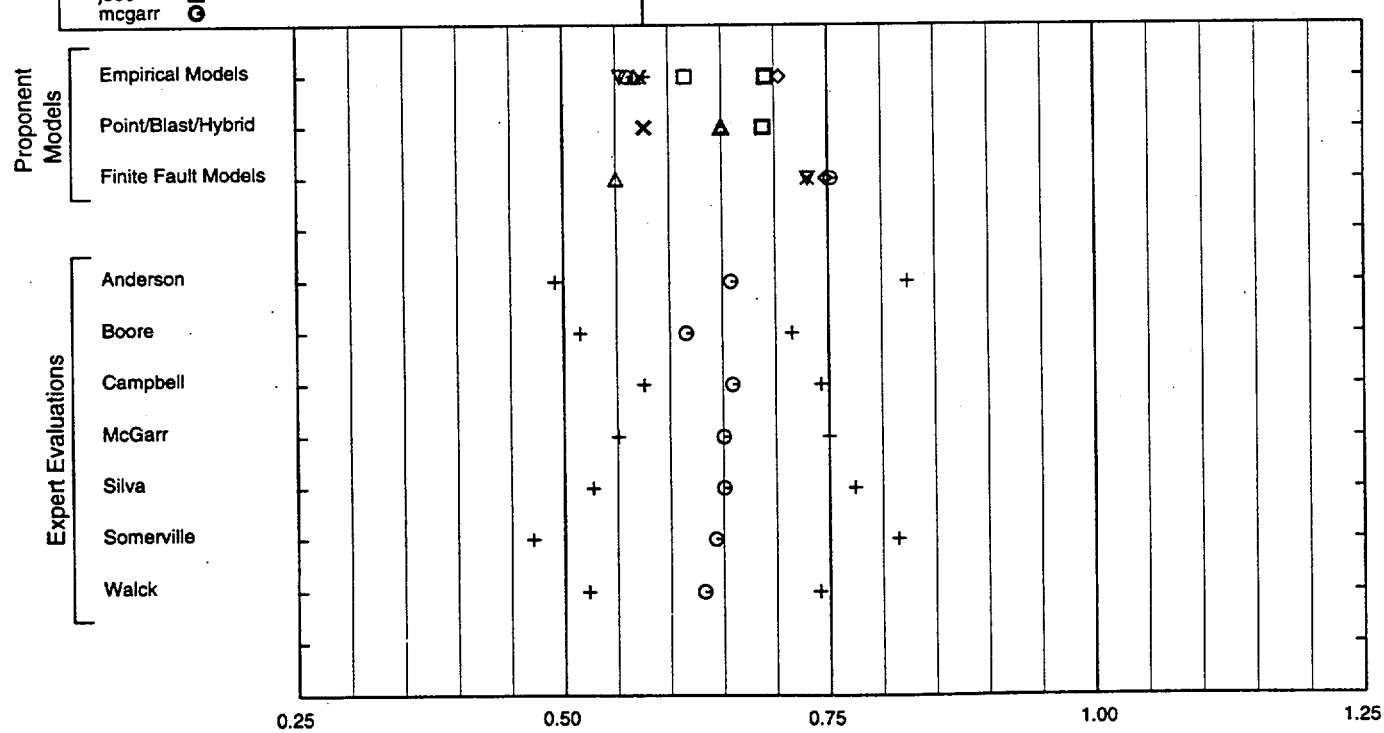
case 9, M= 6.5, shallow, xd= -1 km, FW, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

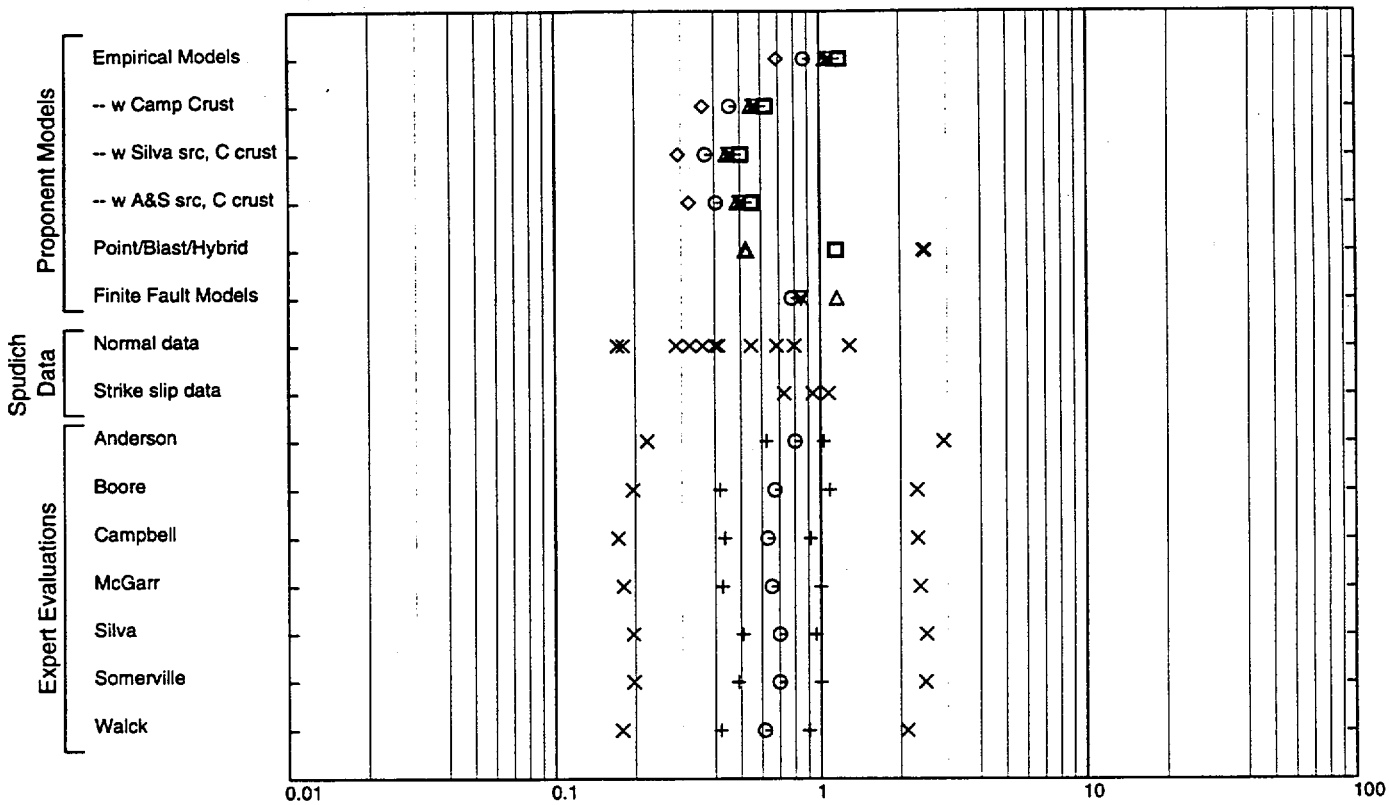
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



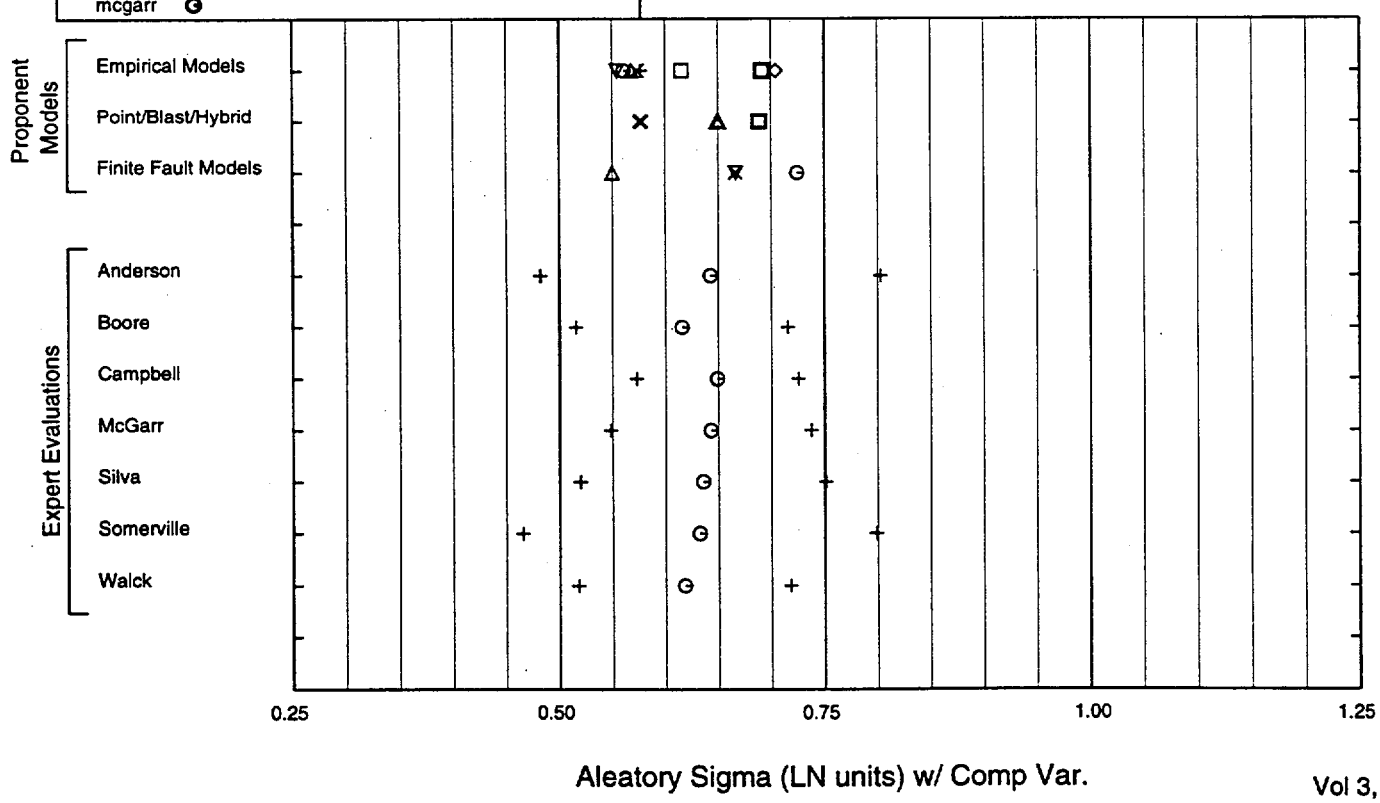
Aleatory Sigma (LN units) w/ Comp Var.

case 10, M= 6.5, shallow, xd= 5 km, HW, 5 Hz, HOR, 6/5/97, Rev 1

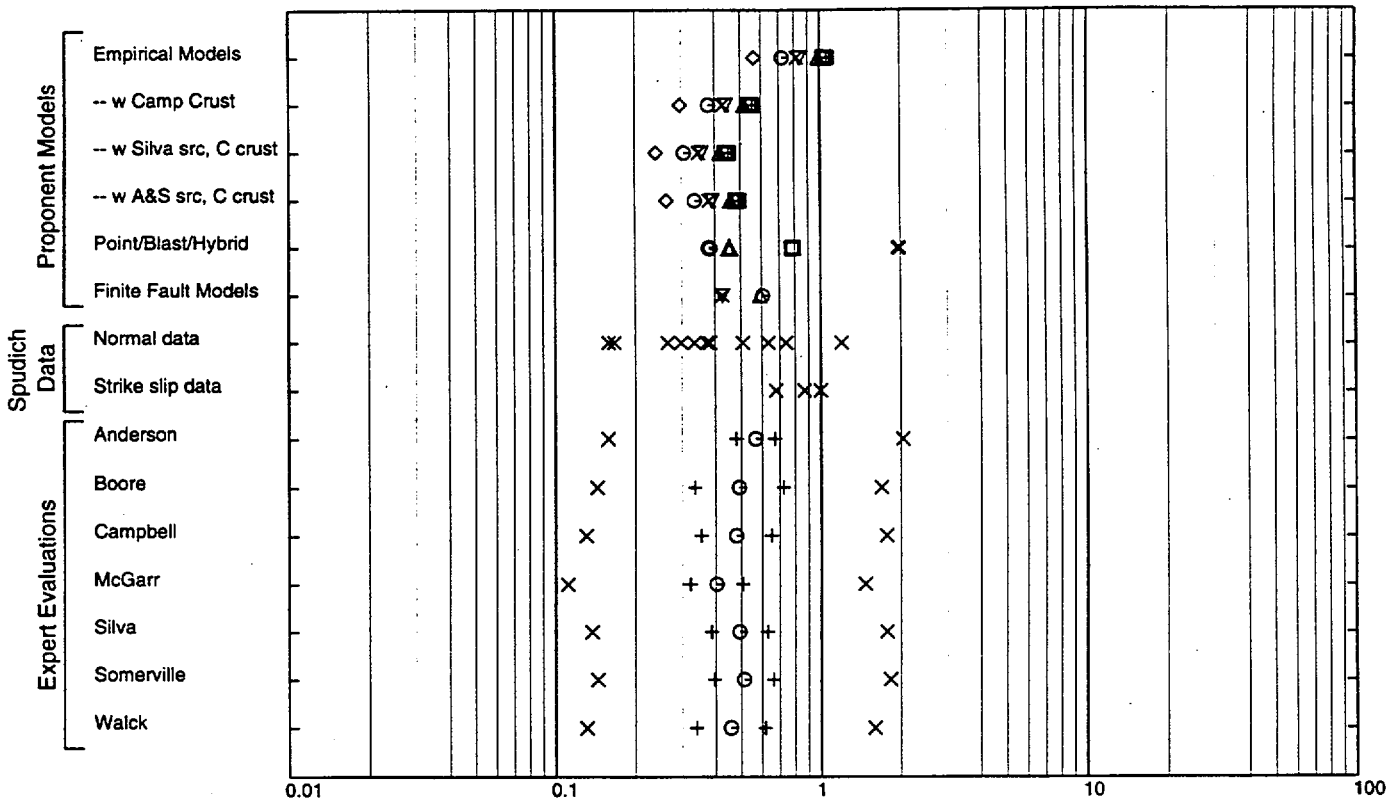


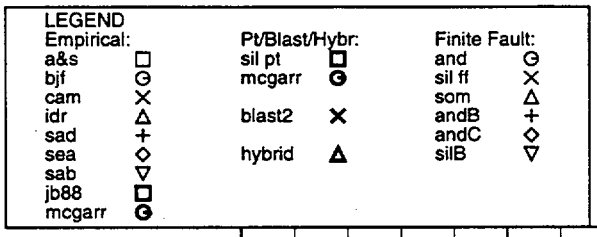
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

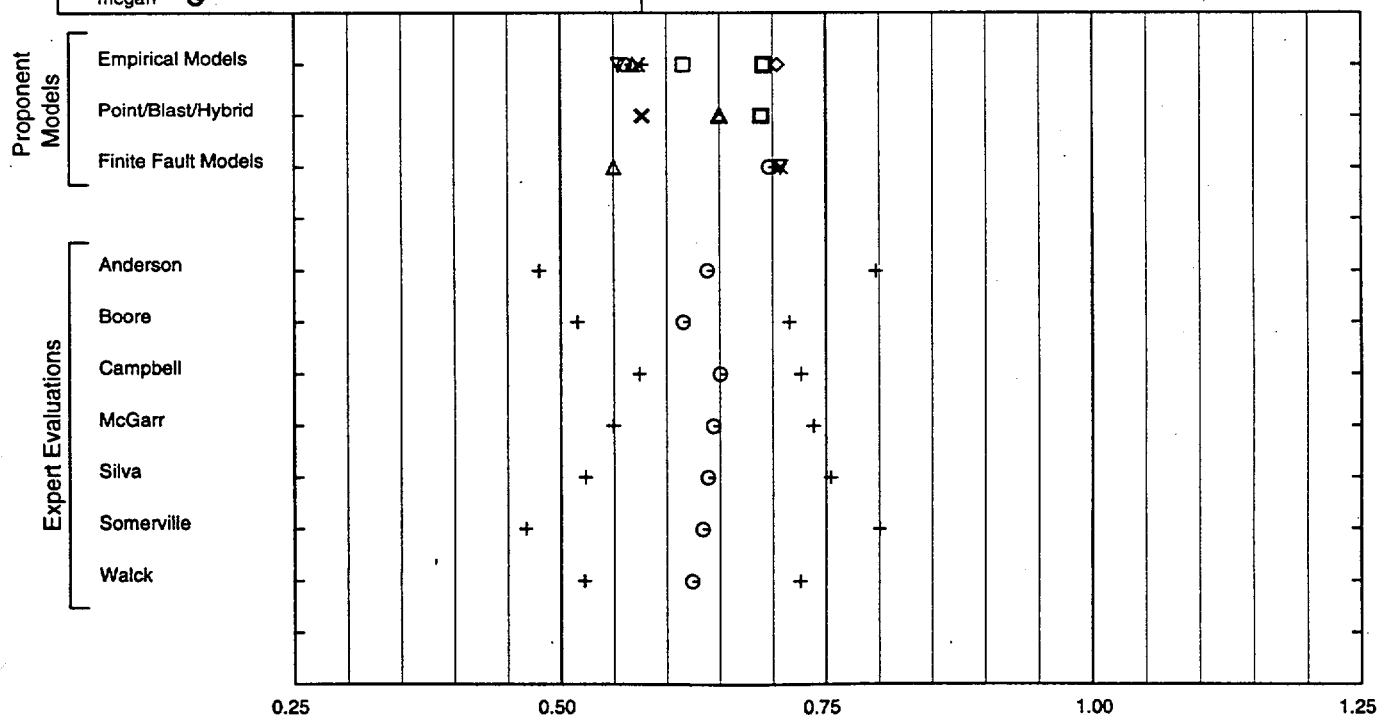


case 11, M= 6.5, shallow, xd= -5 km, FW, 5 Hz, HOR, 6/5/97, Rev 1



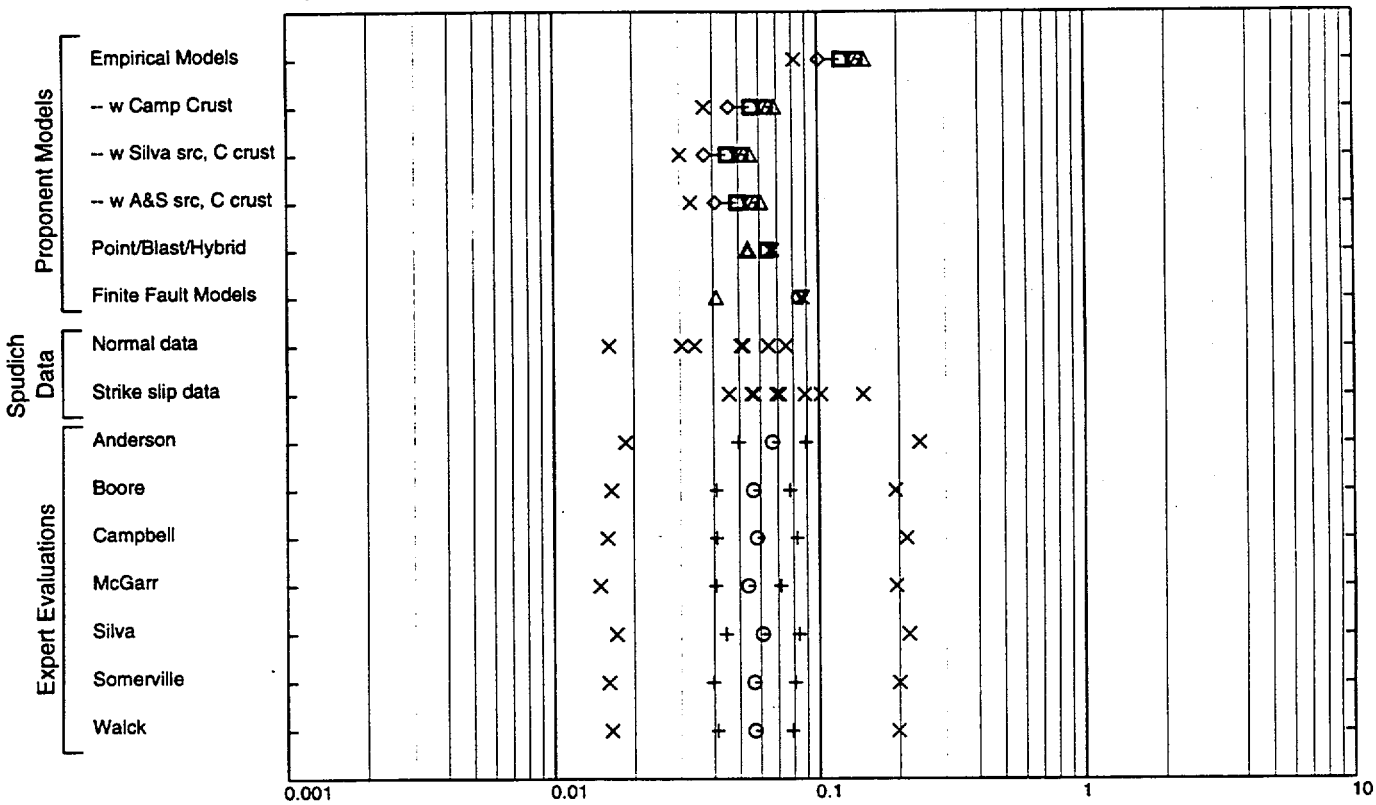


Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

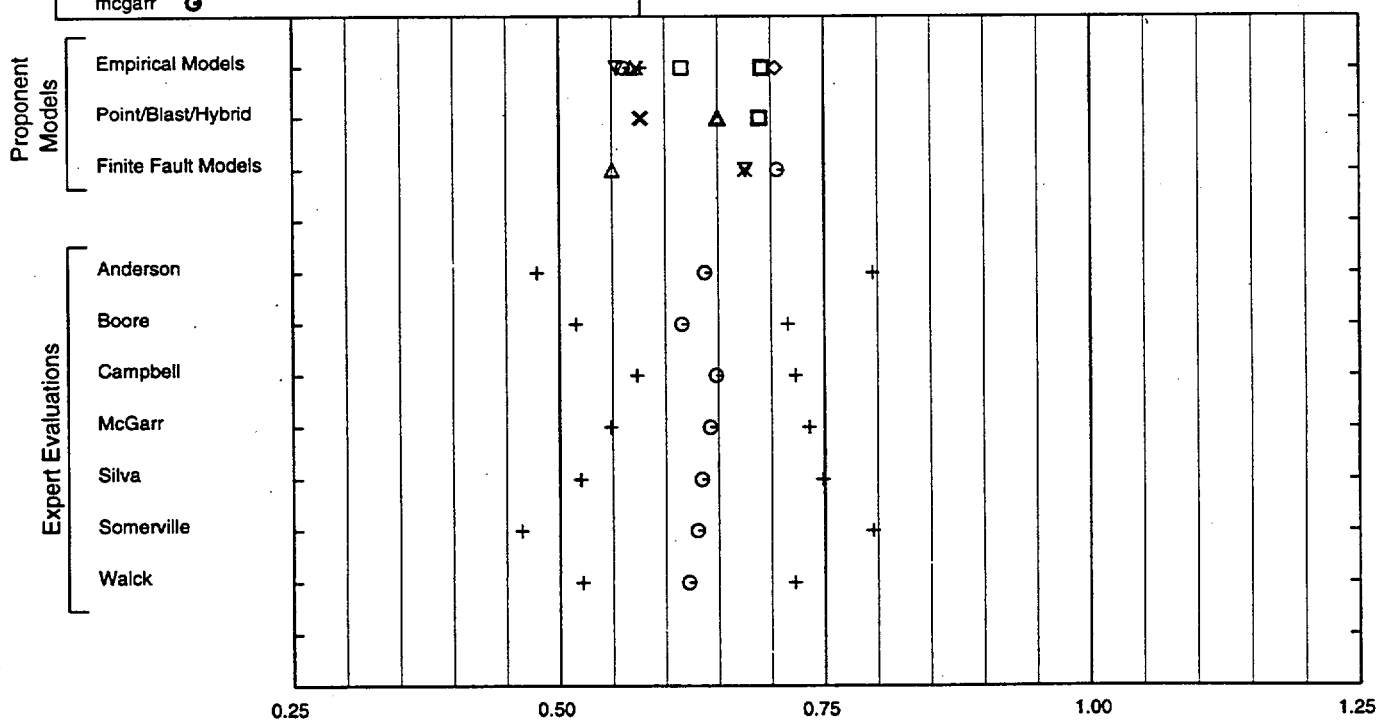
case 12, M= 6.5, shallow, xd= 50 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

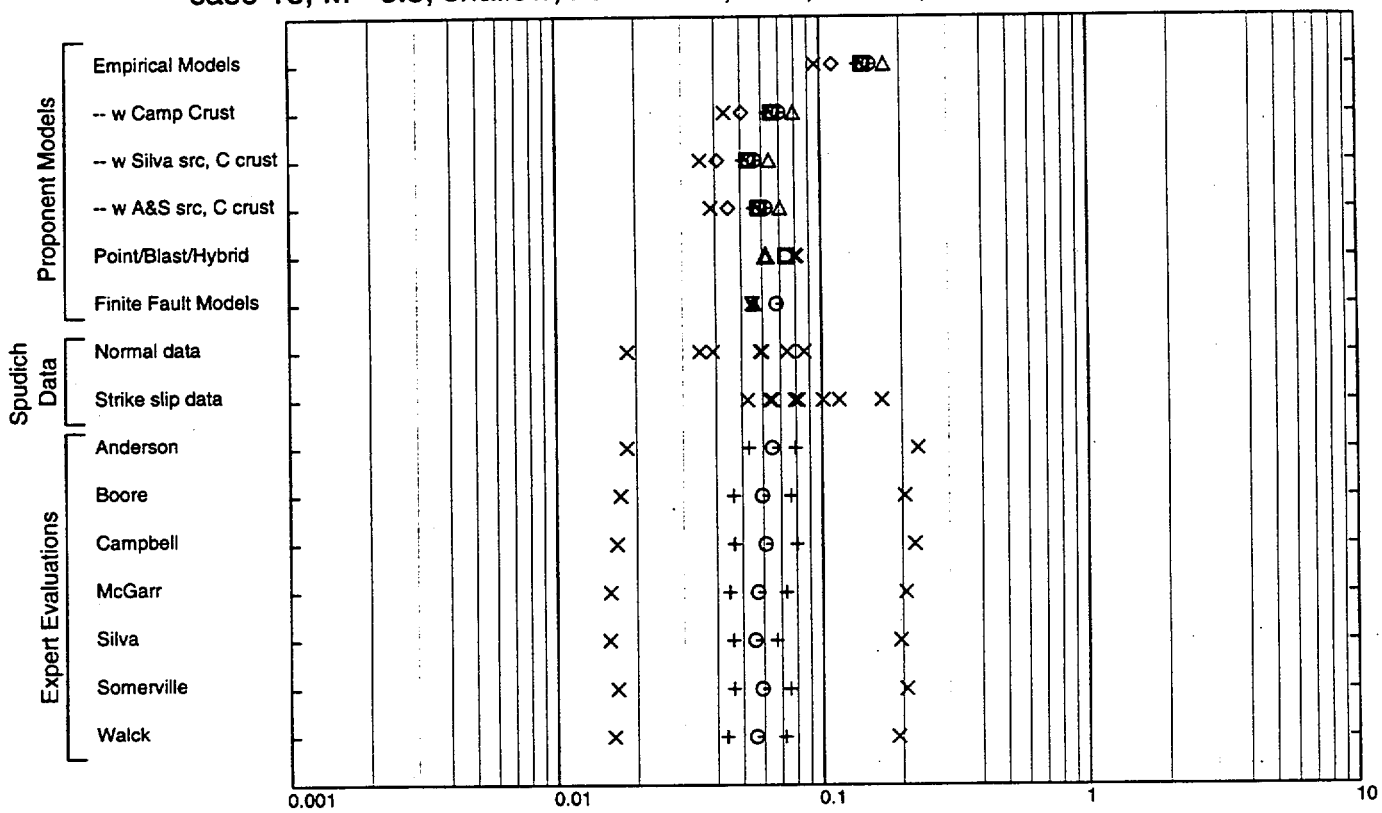
LEGEND

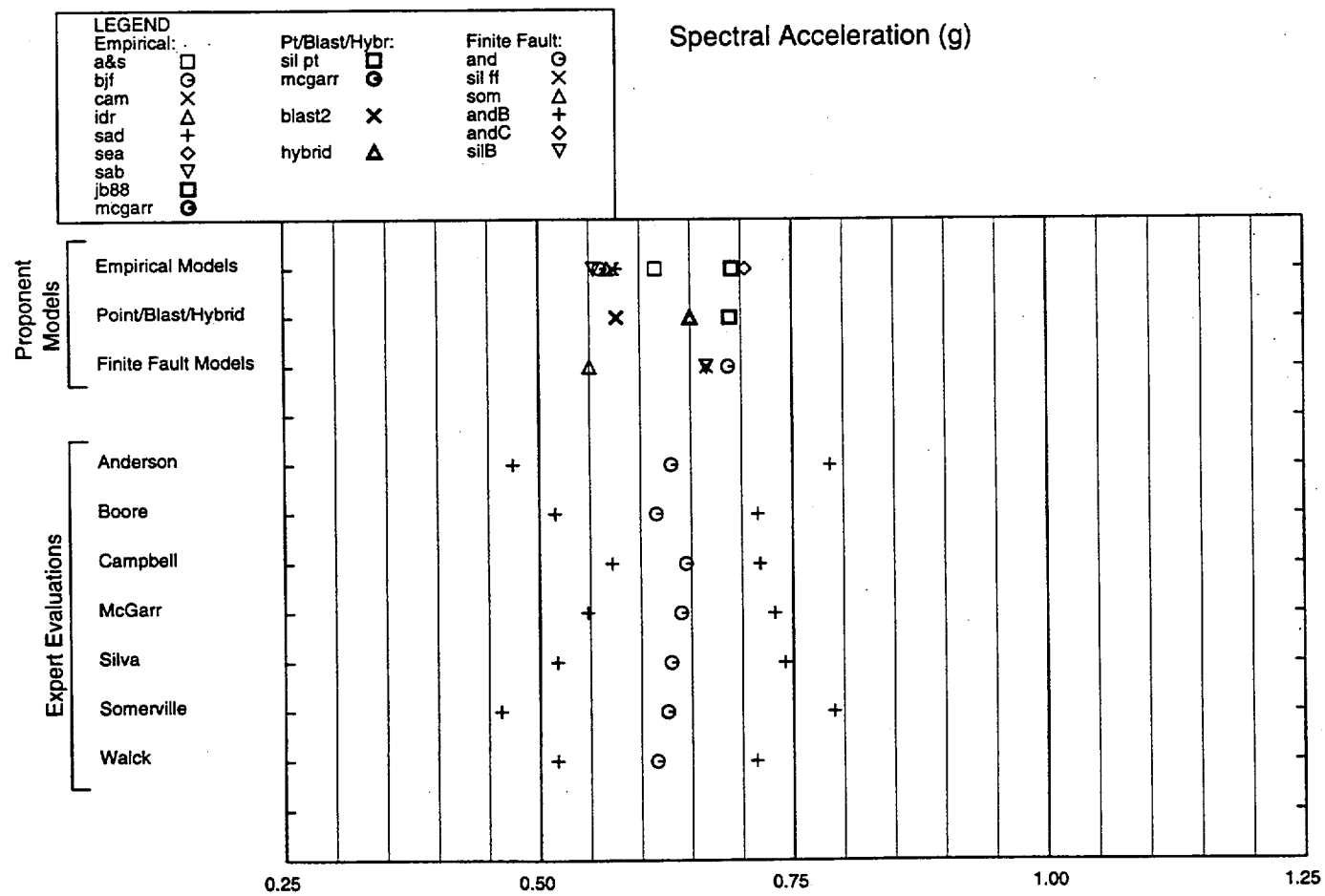
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

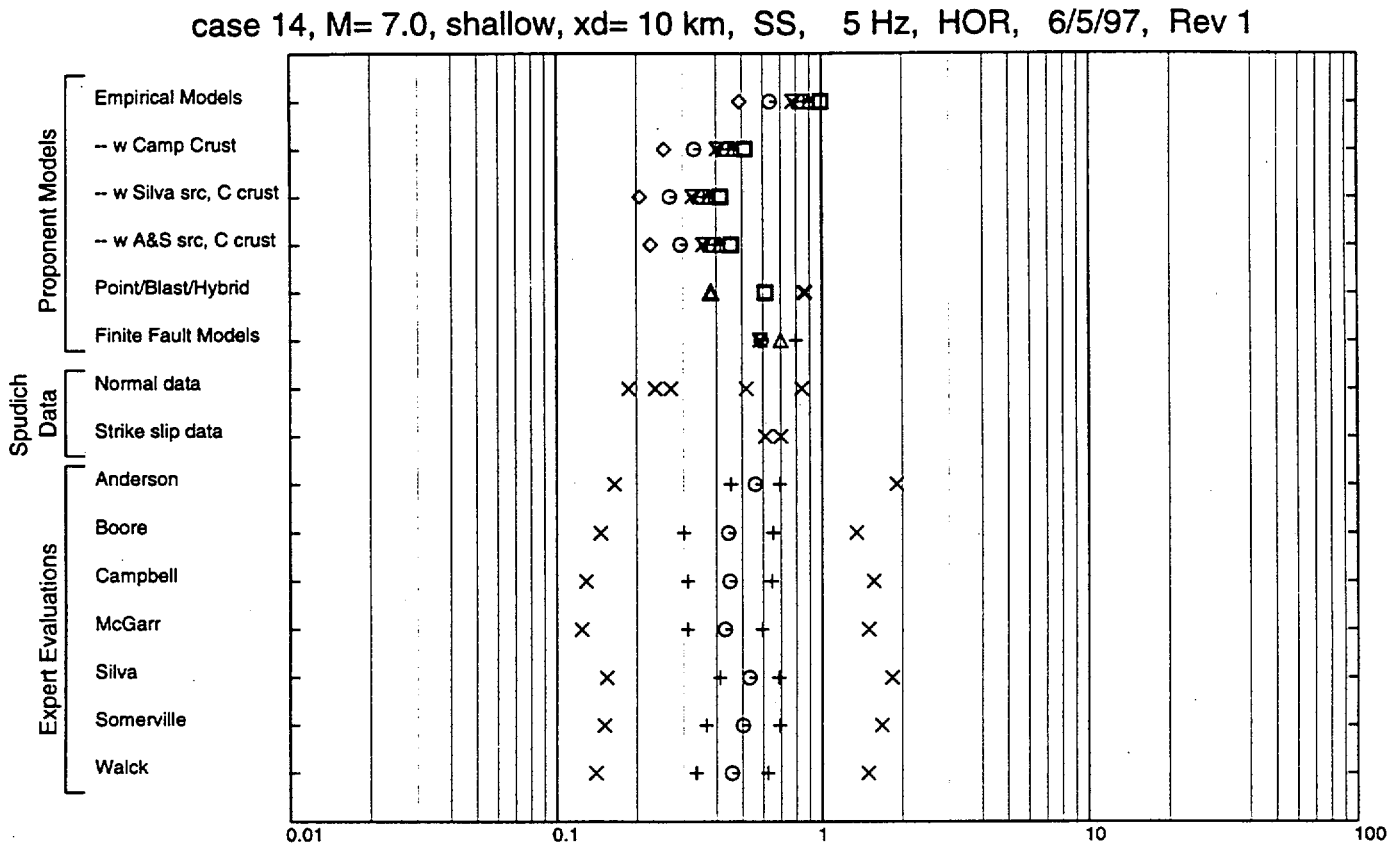


Aleatory Sigma (LN units) w/ Comp Var.

case 13, M= 6.5, shallow, xd= 50 km, HW, 5 Hz, HOR, 6/5/97, Rev 1

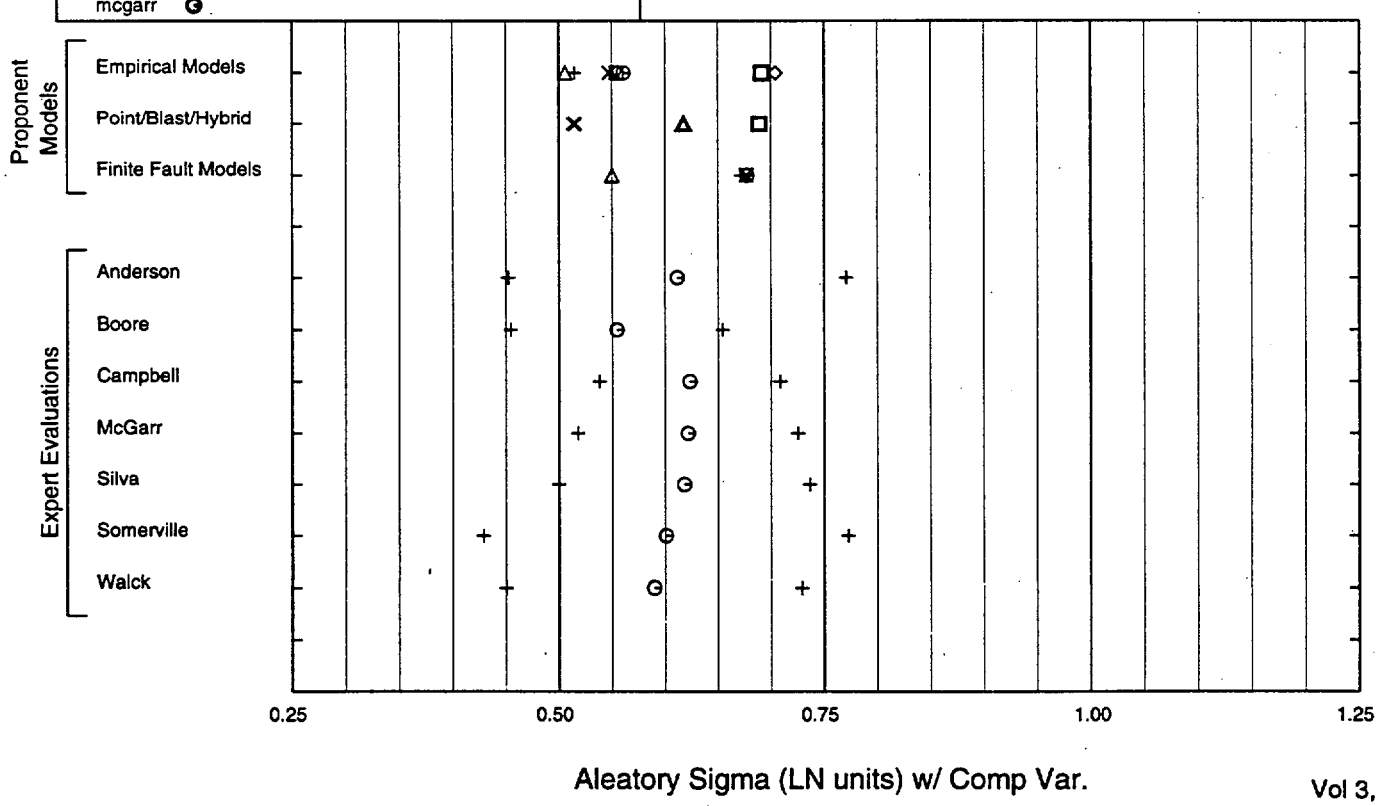




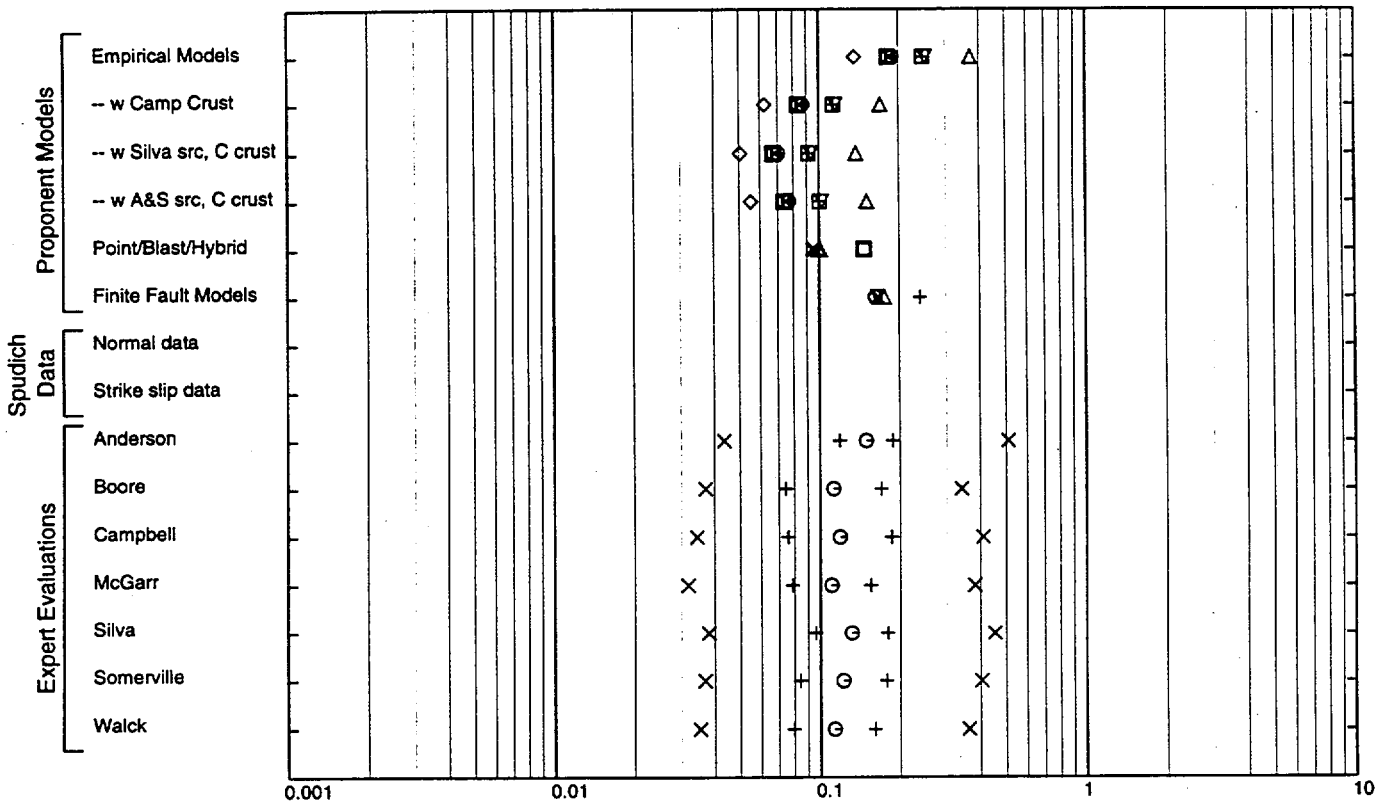


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



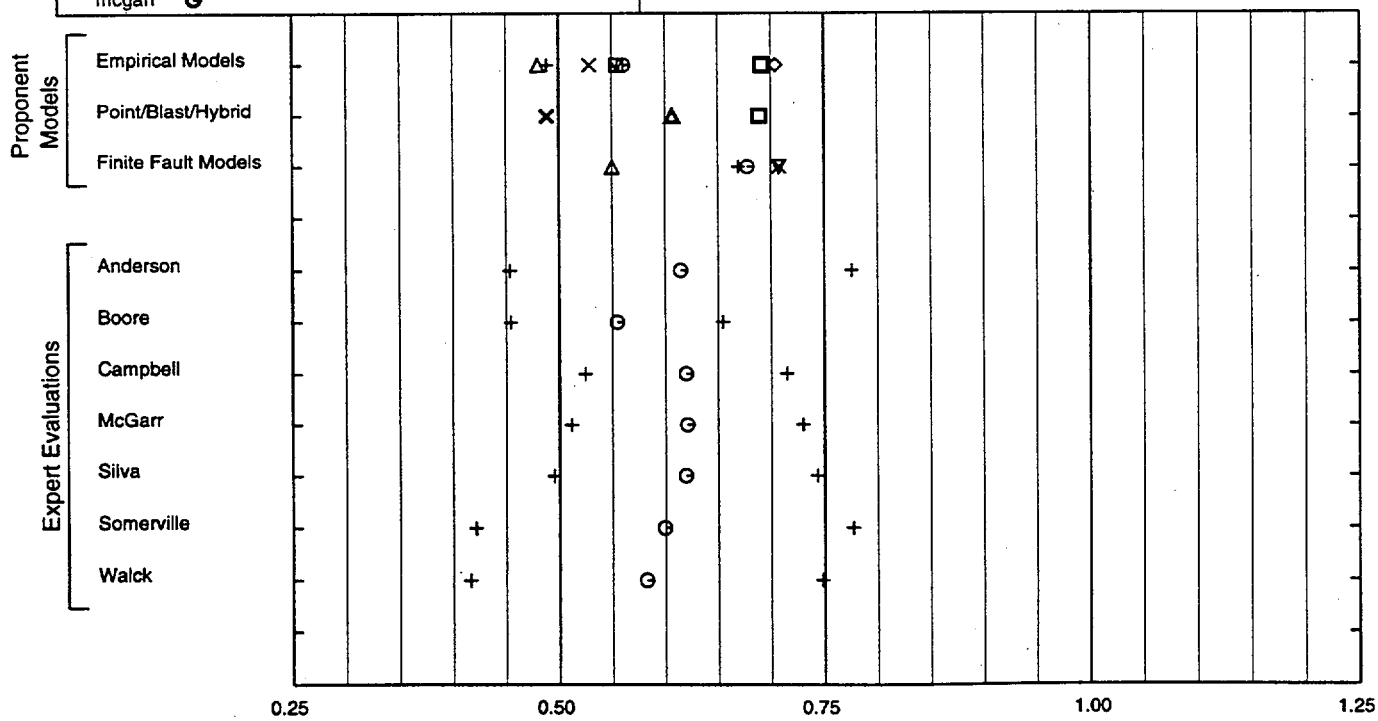
case 15, M= 7.5, shallow, xd= 50 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



LEGEND

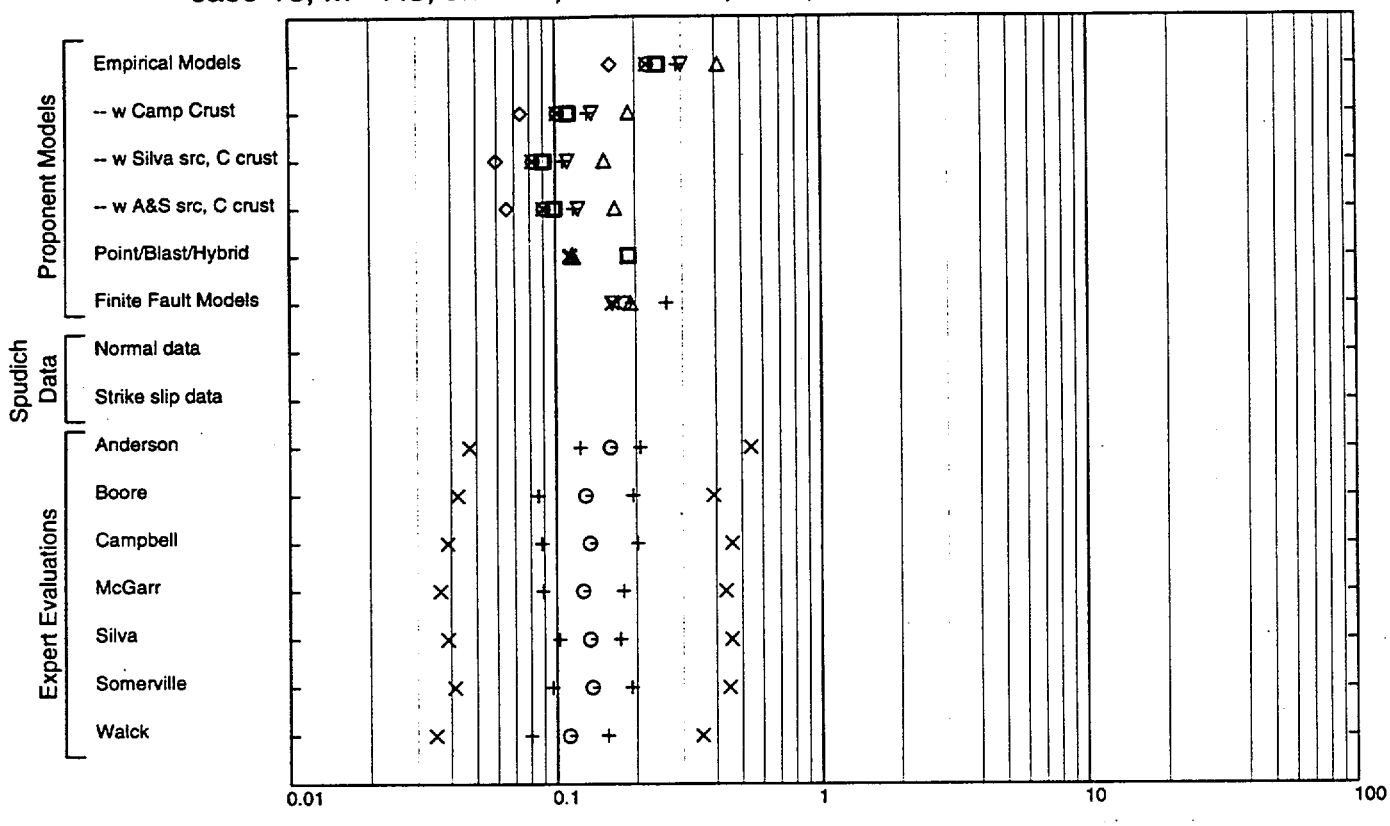
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



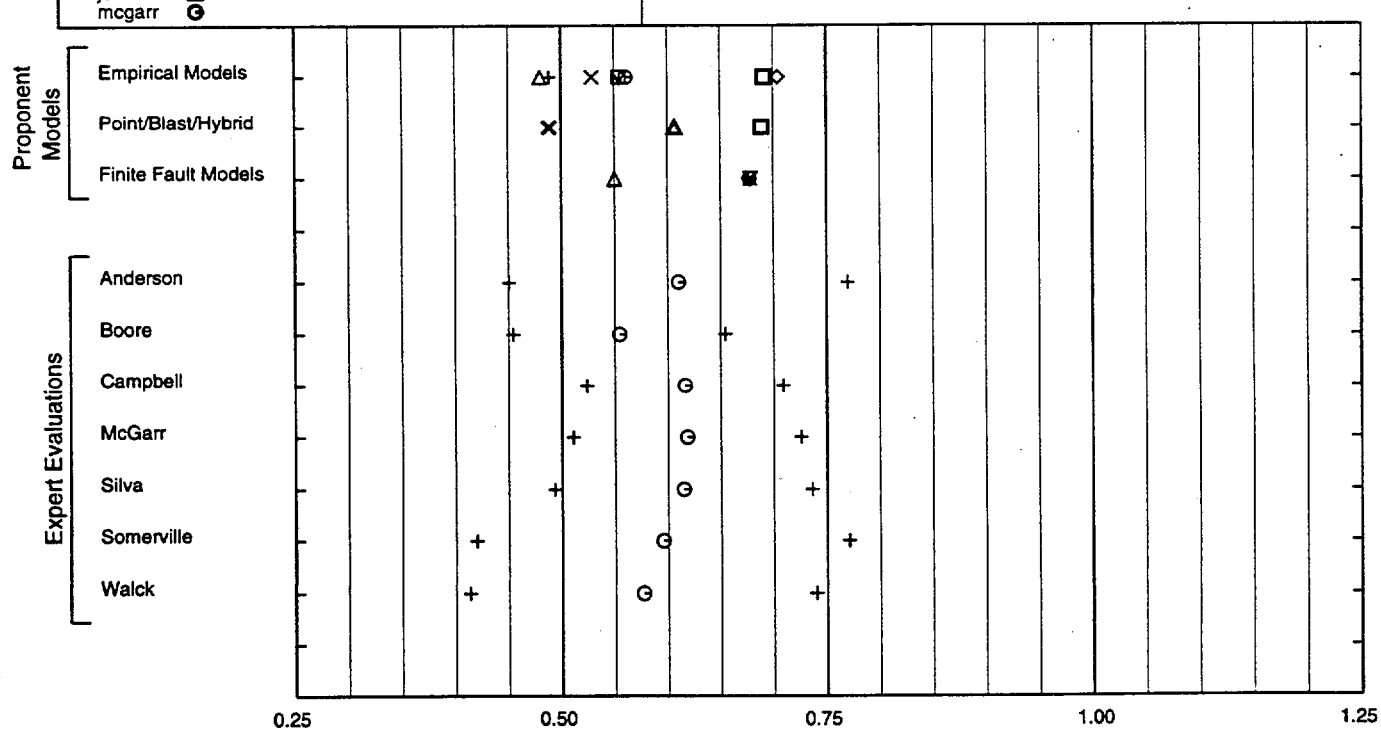
Aleatory Sigma (LN units) w/ Comp Var.

case 16, M= 7.5, shallow, xd= 50 km, HW, 5 Hz, HOR, 6/5/97, Rev 1

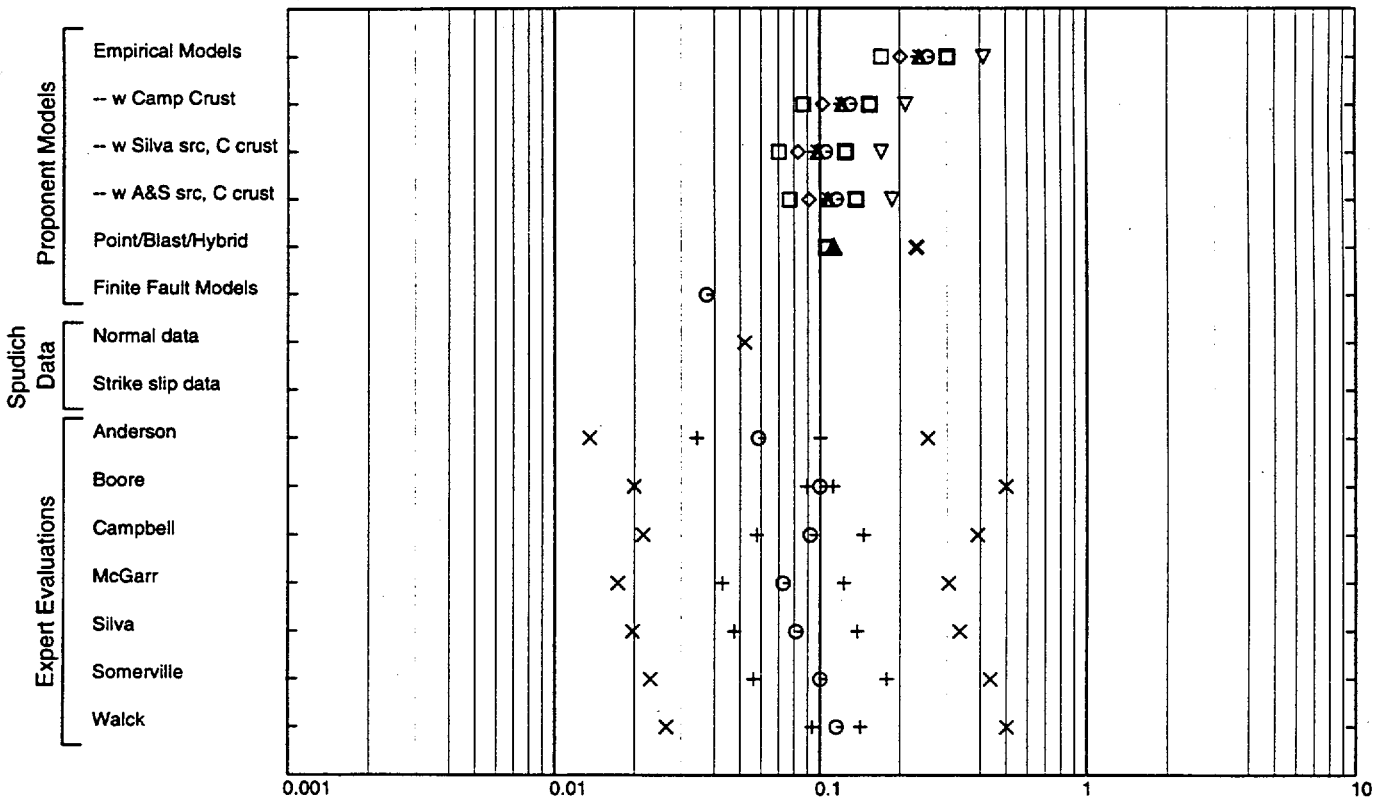


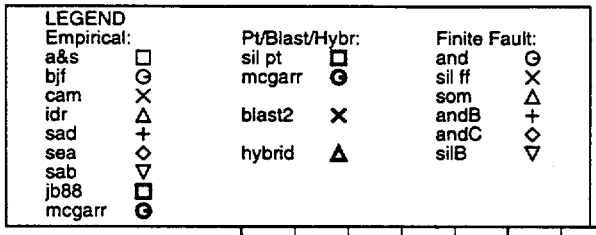
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

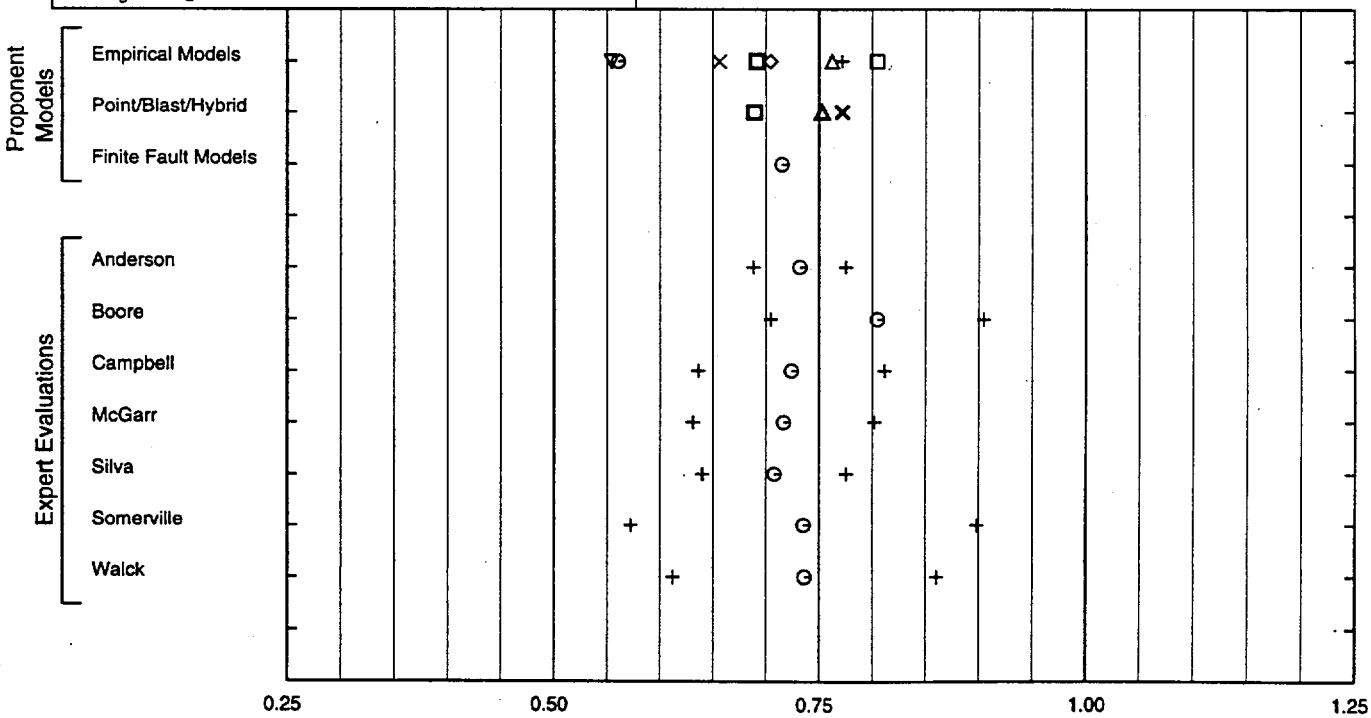


case 17, M= 5.0, deep, xd= 1 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



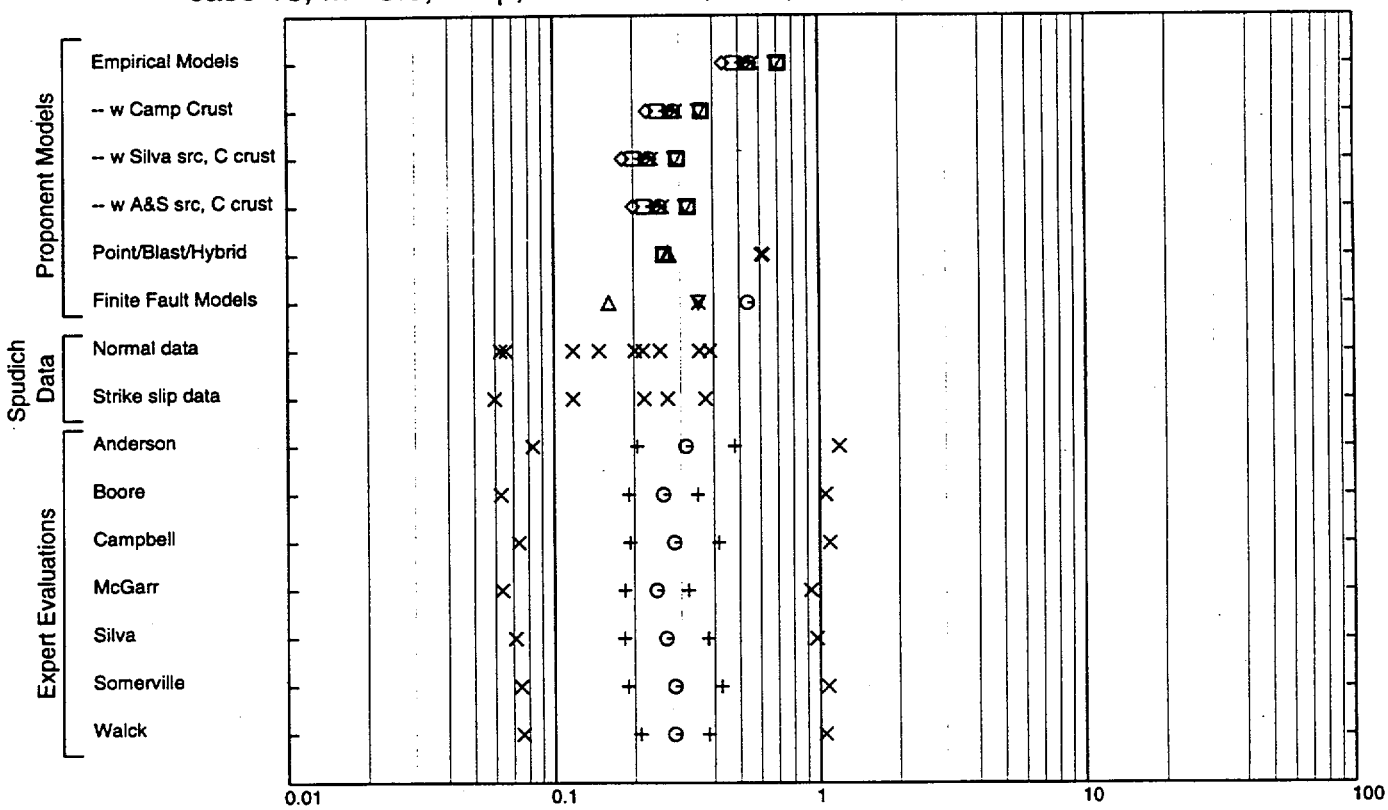


Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

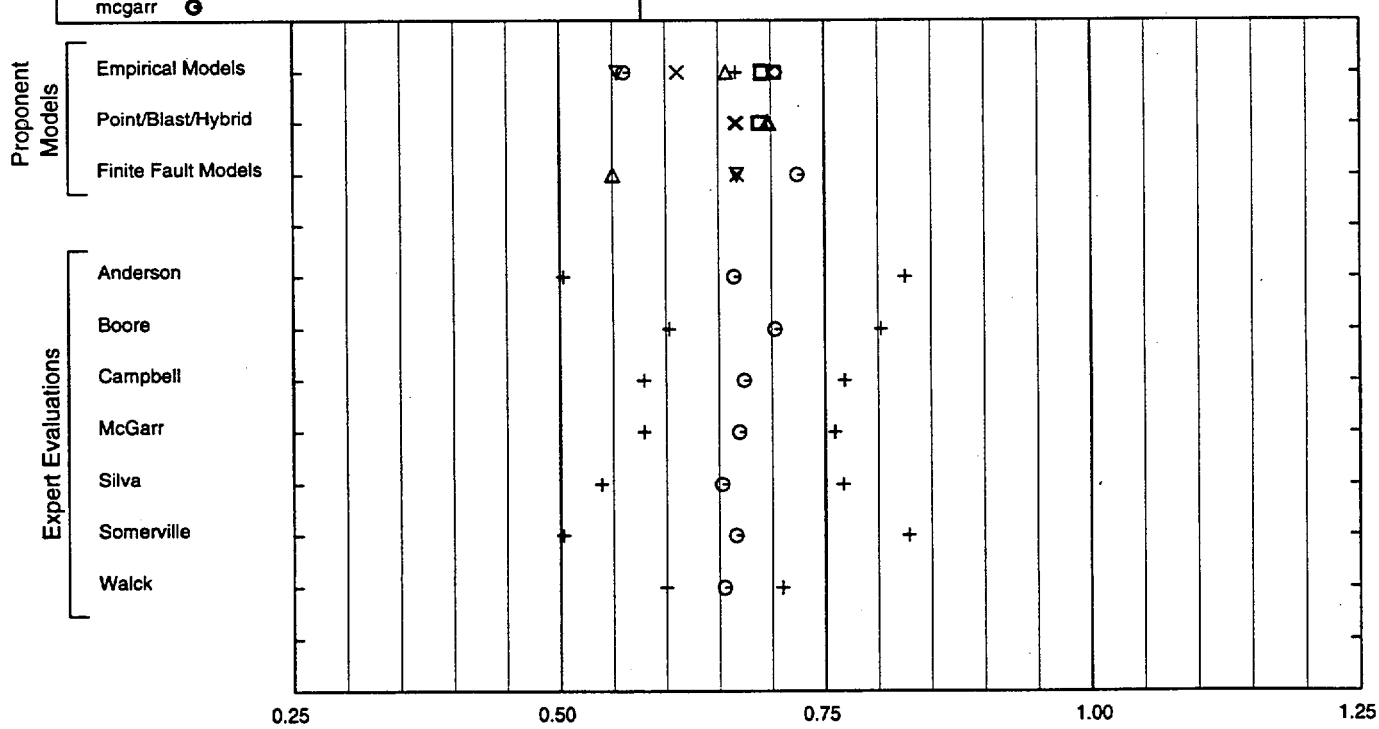
case 18, M= 5.8, deep, xd= 5 km, HW, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

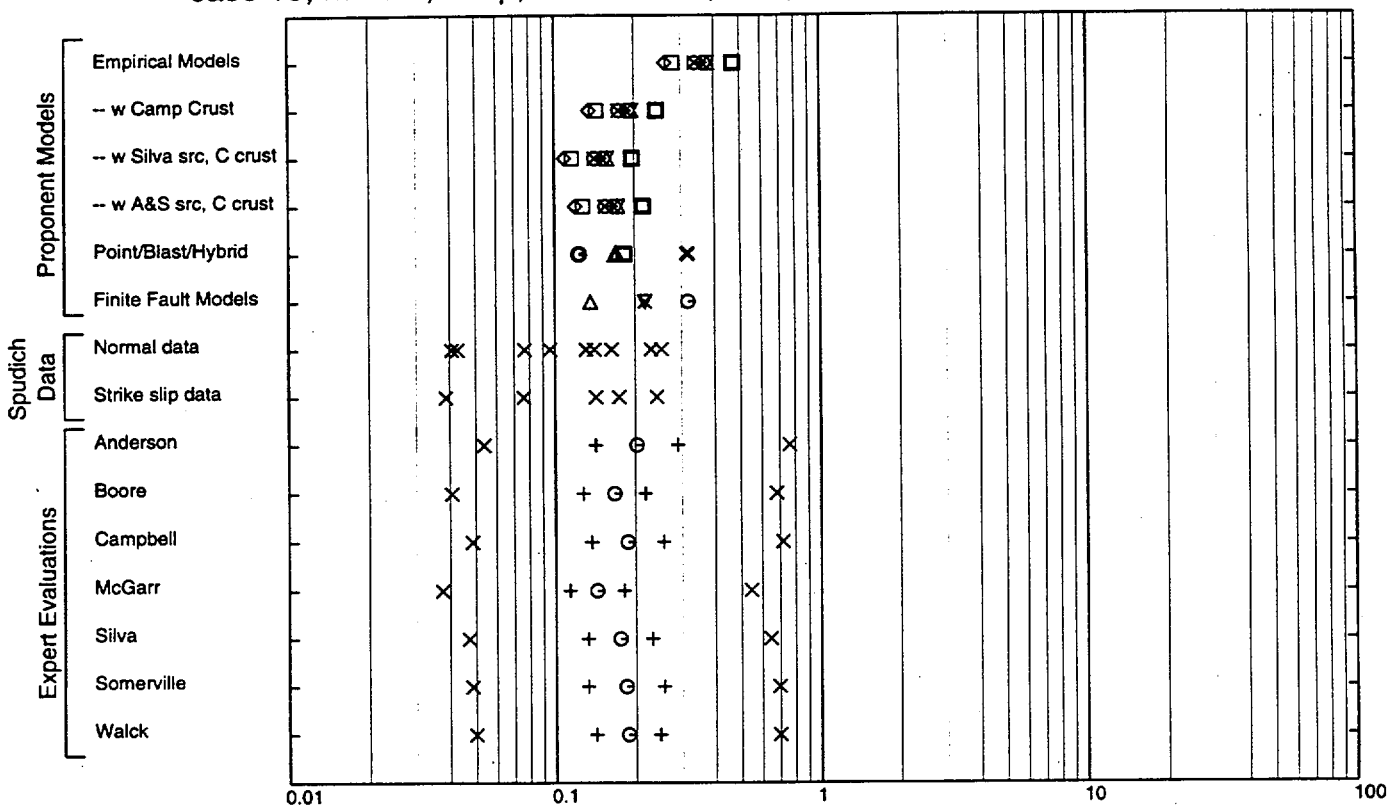
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

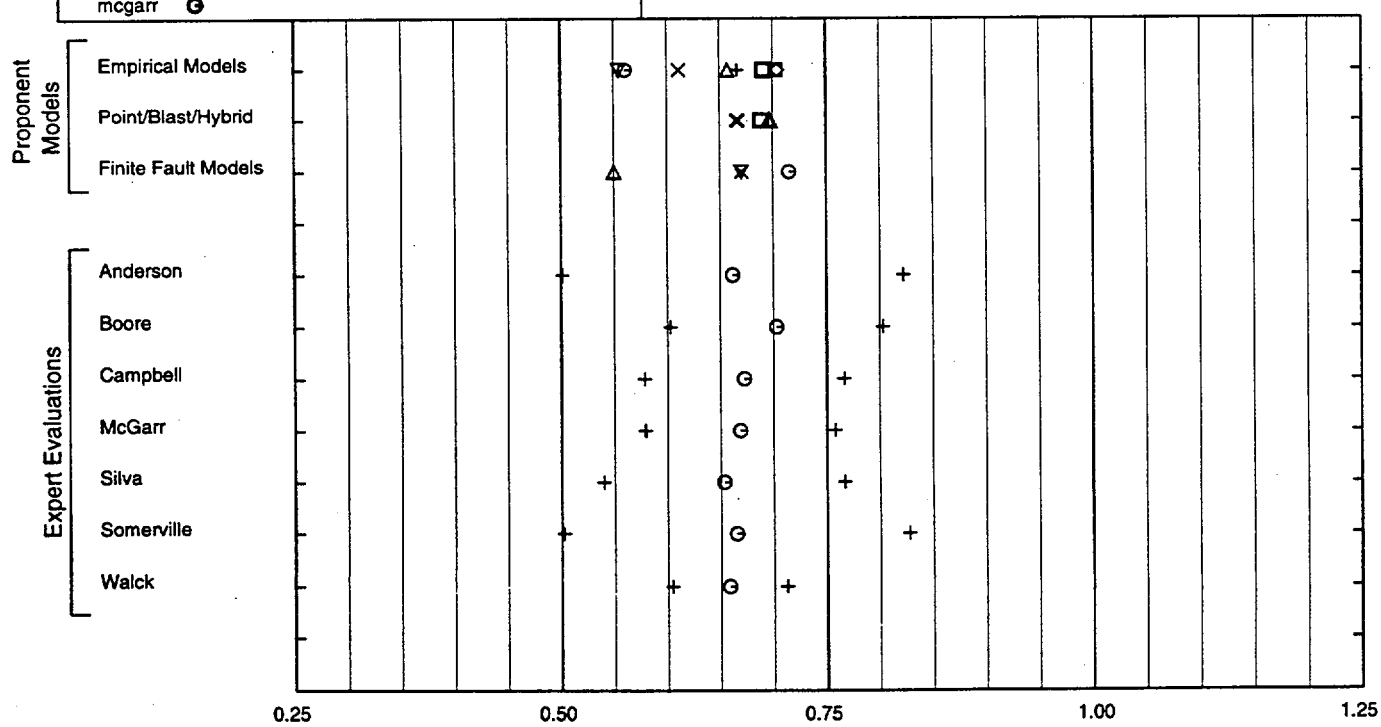
case 19, M= 5.8, deep, xd= -5 km, FW, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

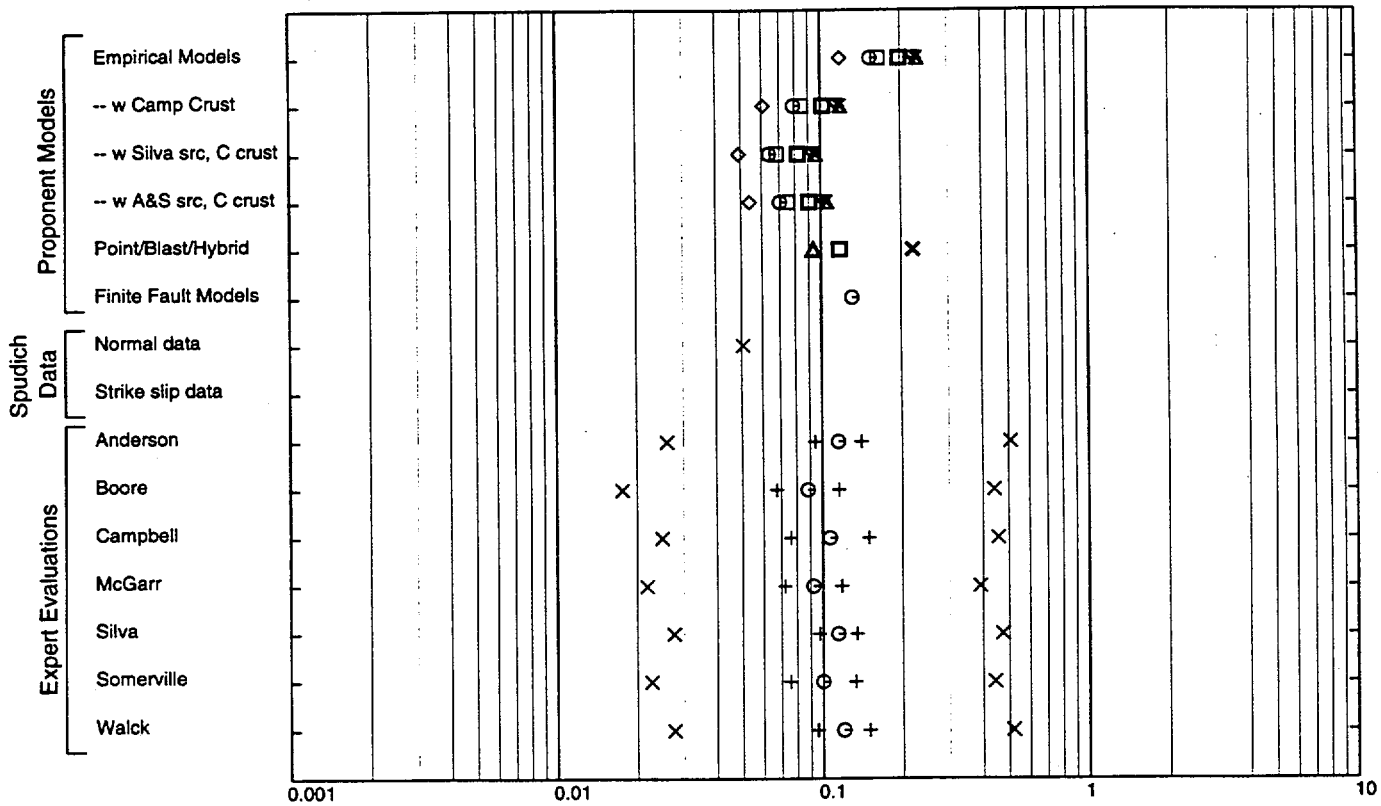
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

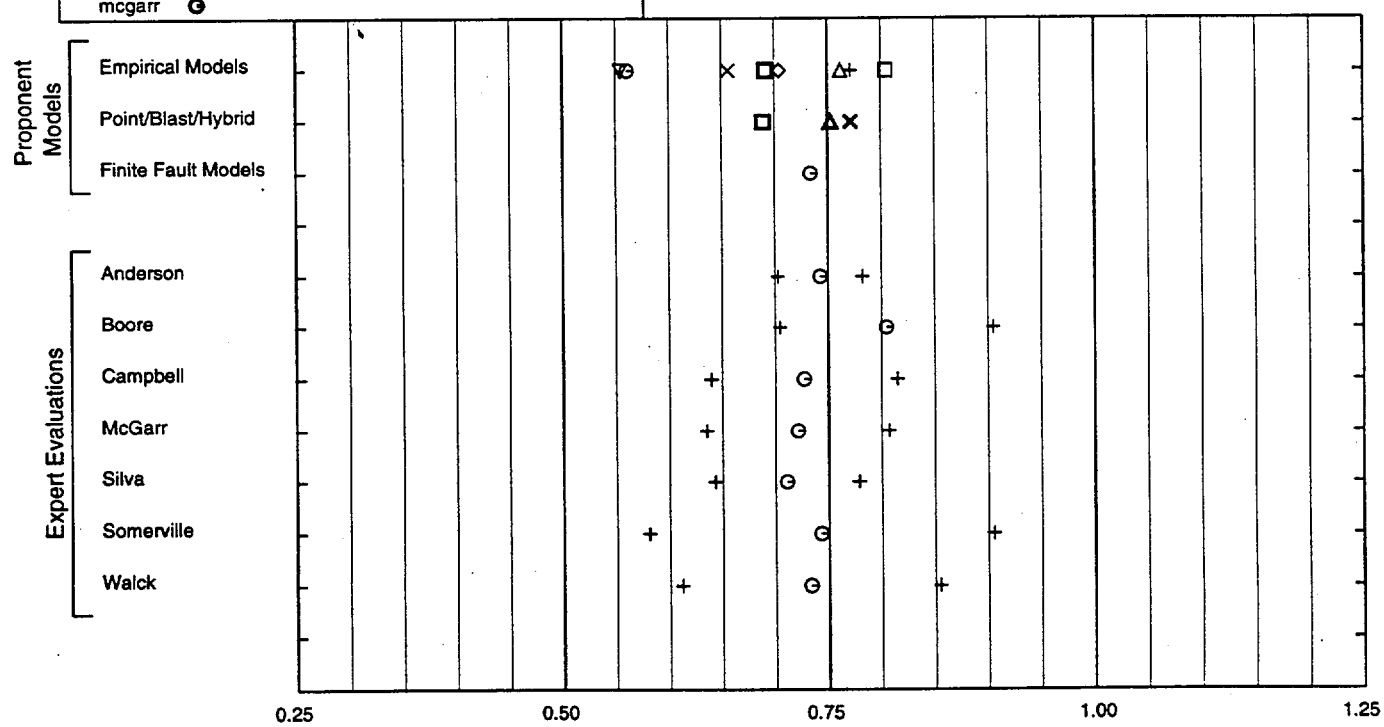
case 20, M= 5.0, shallow, xd= 10 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

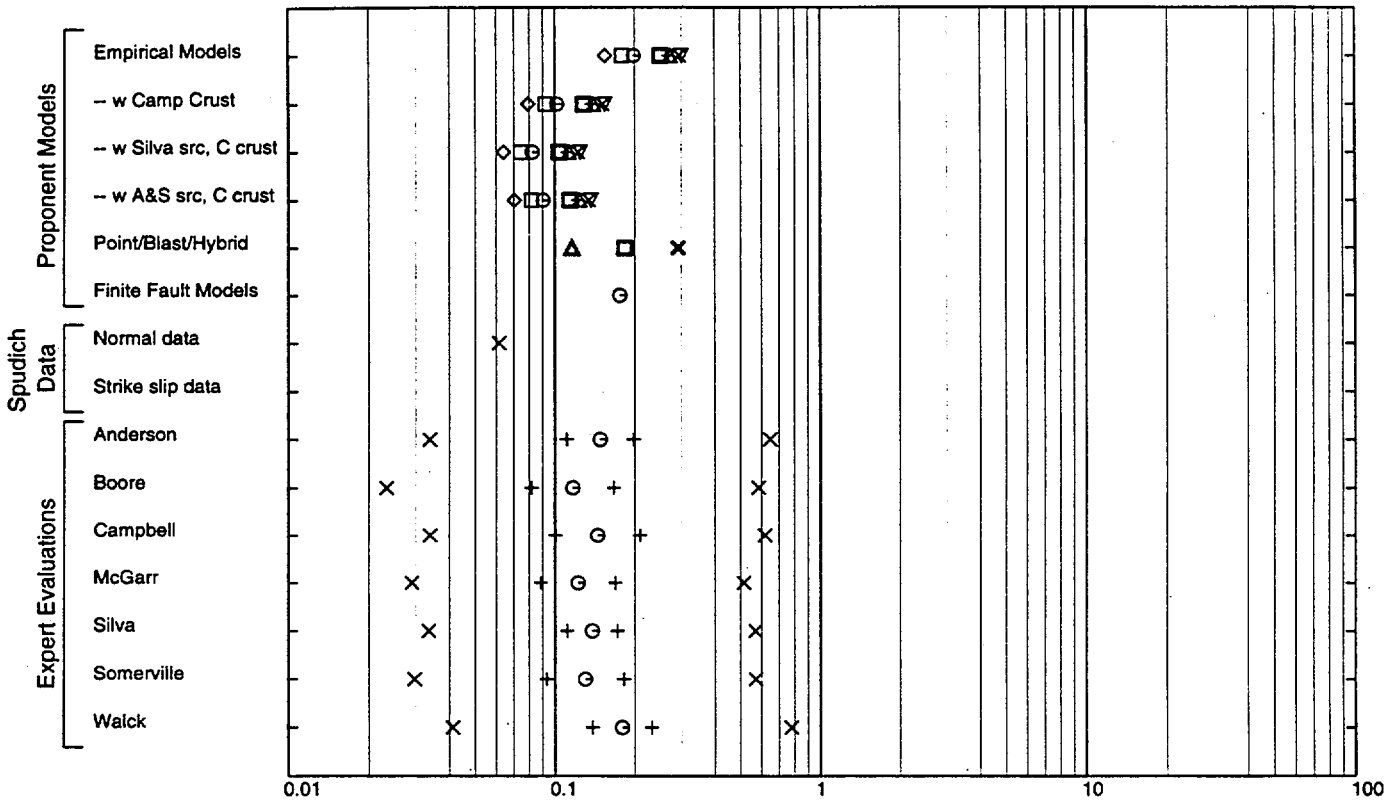
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

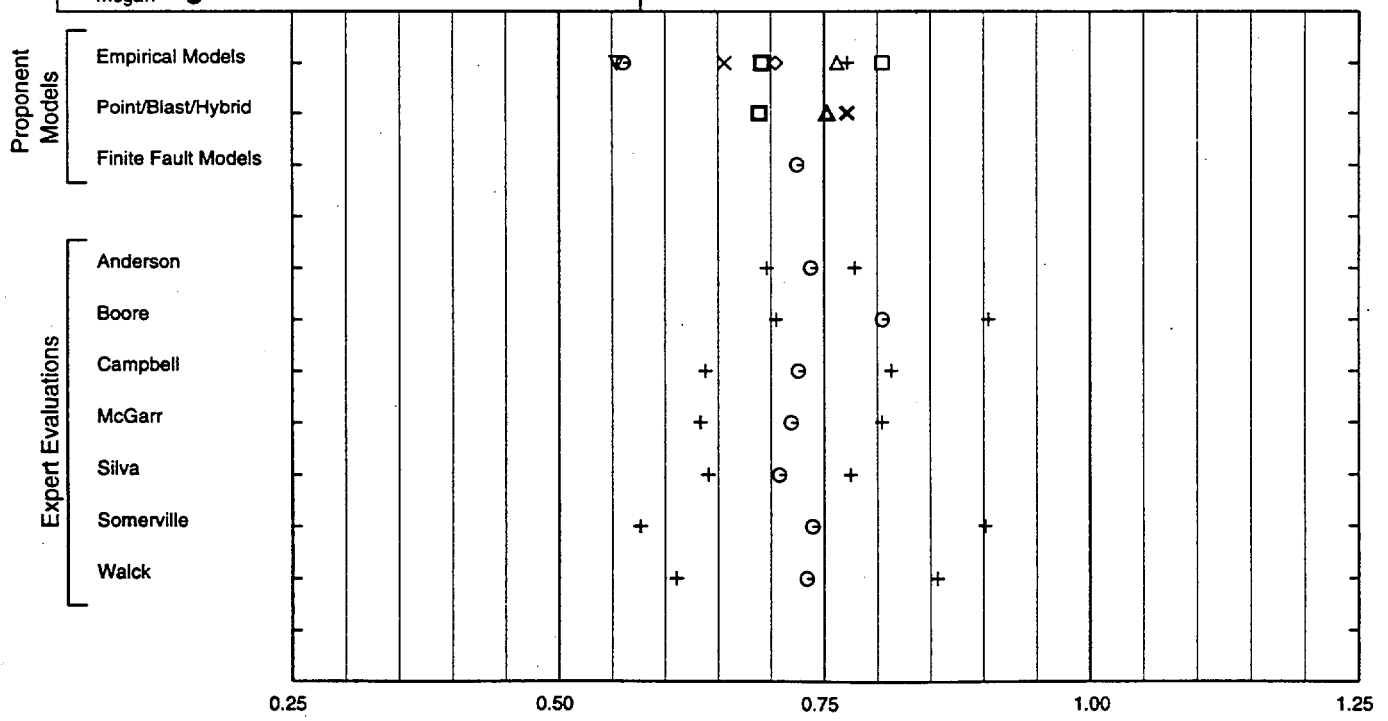
case 21, M= 5.0, shallow, xd= 10 km, HW, 5 Hz, HOR, 6/5/97, Rev 1



LEGEND

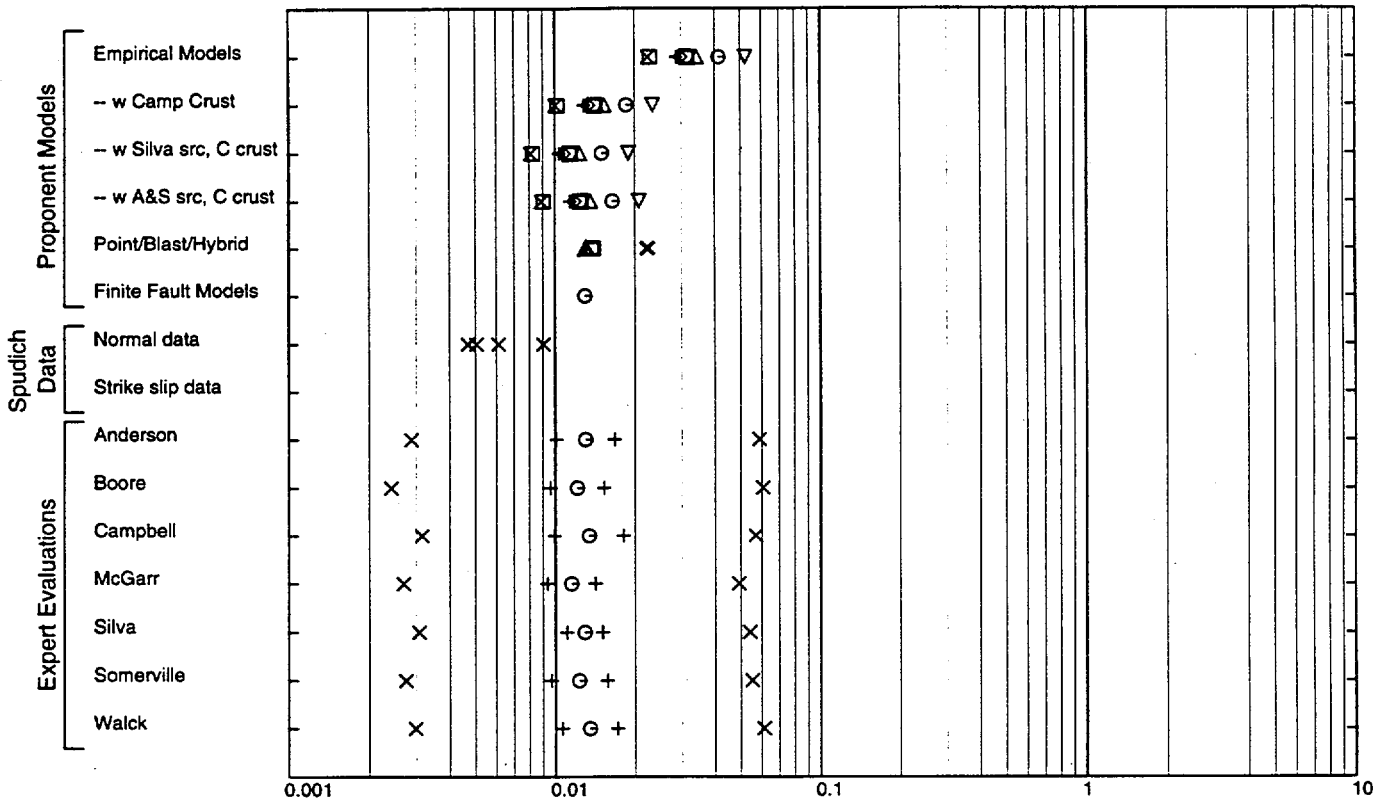
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

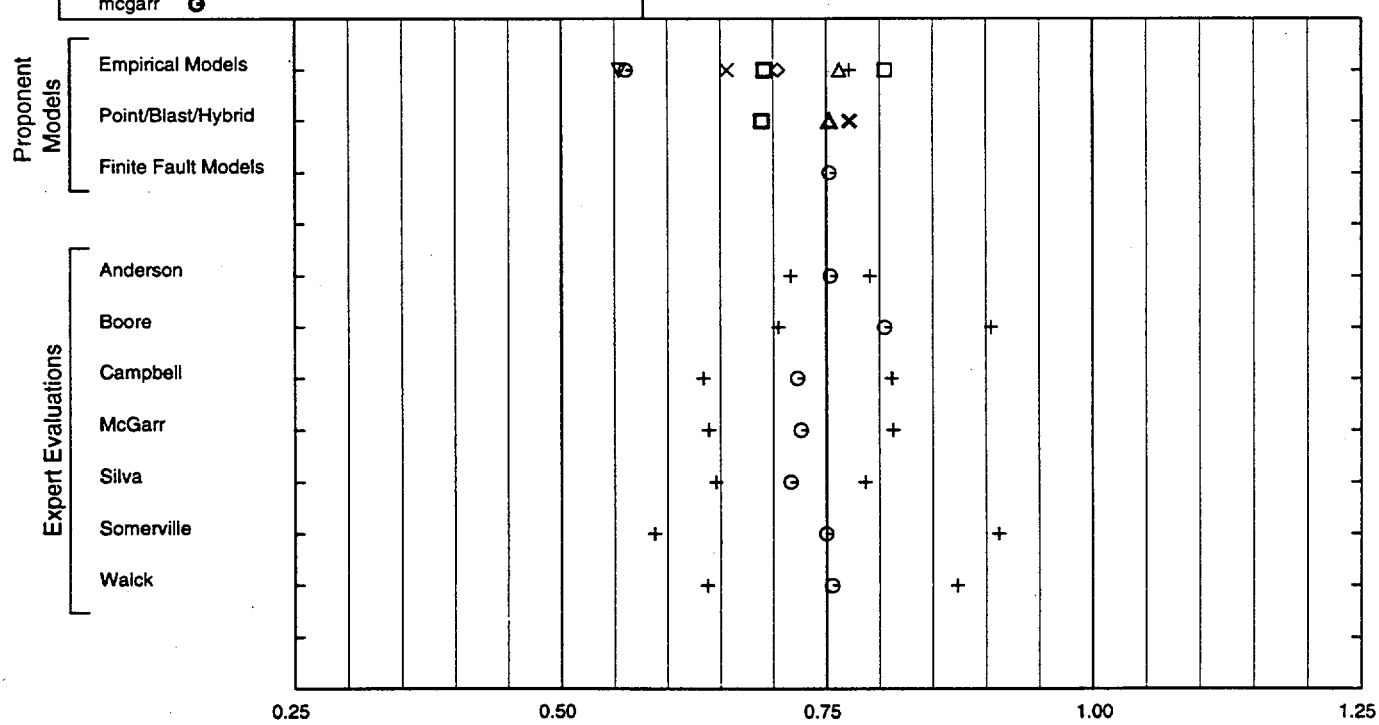
case 22, M= 5.0, shallow, xd= 50 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

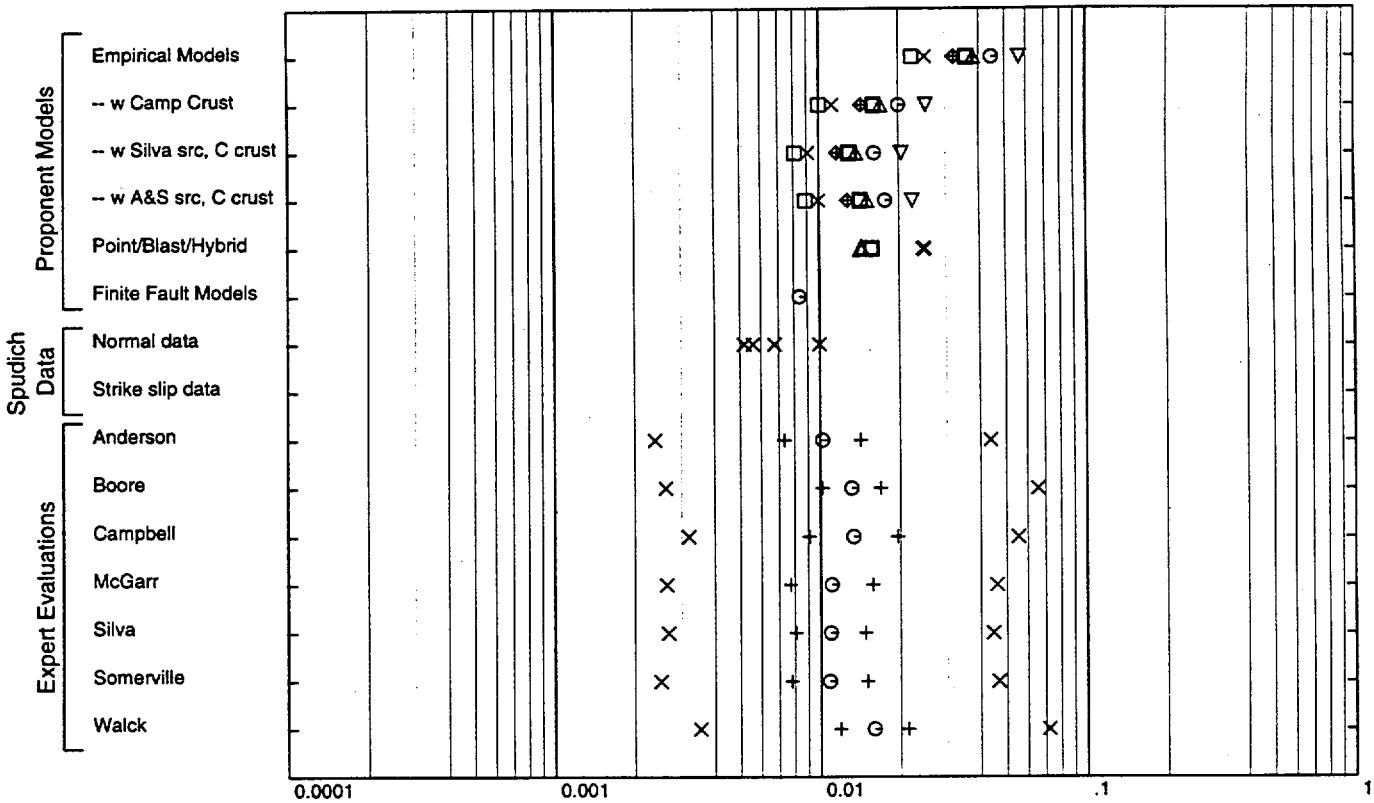
LEGEND

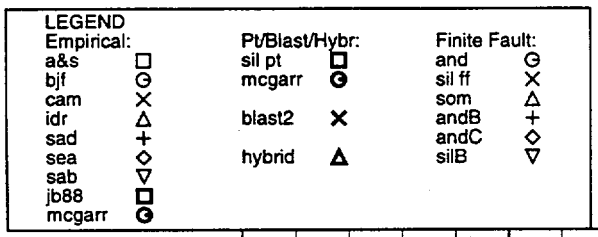
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



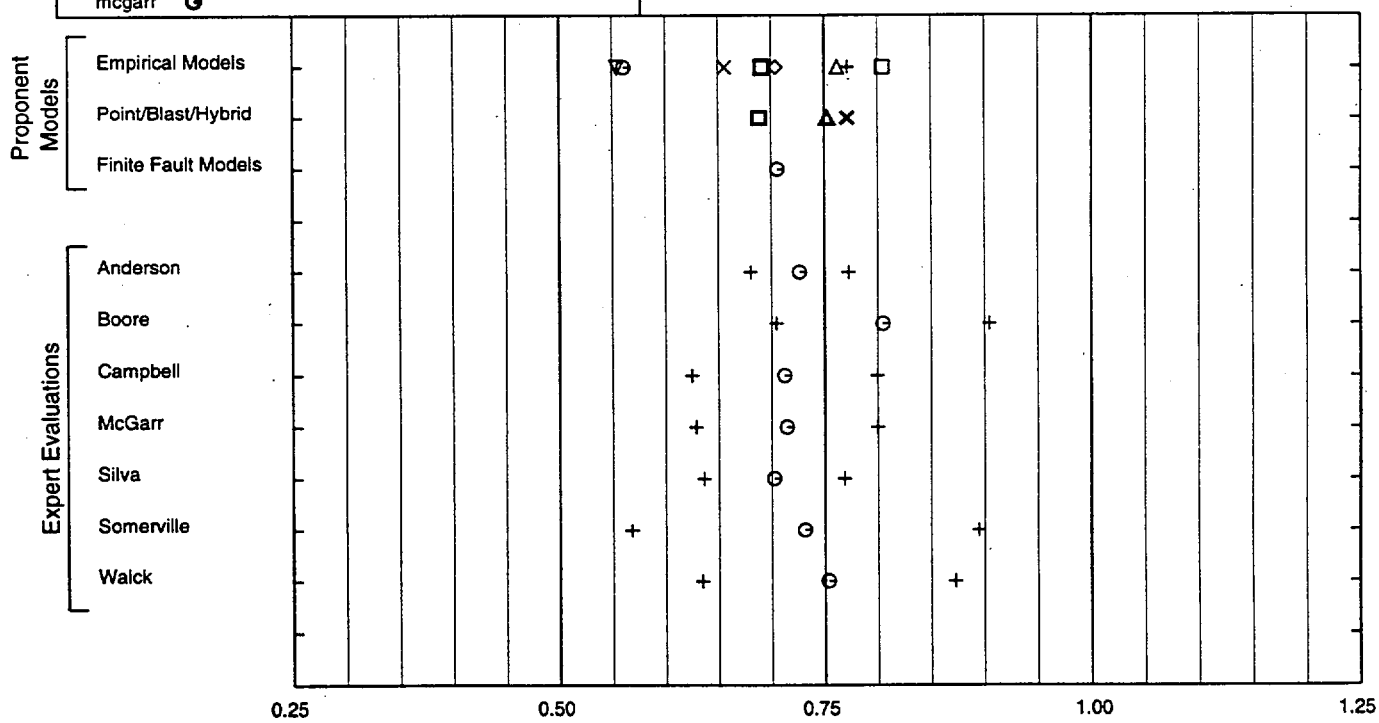
Aleatory Sigma (LN units) w/ Comp Var.

case 23, M= 5.0, shallow, xd= 50 km, HW, 5 Hz, HOR, 6/5/97, Rev 1



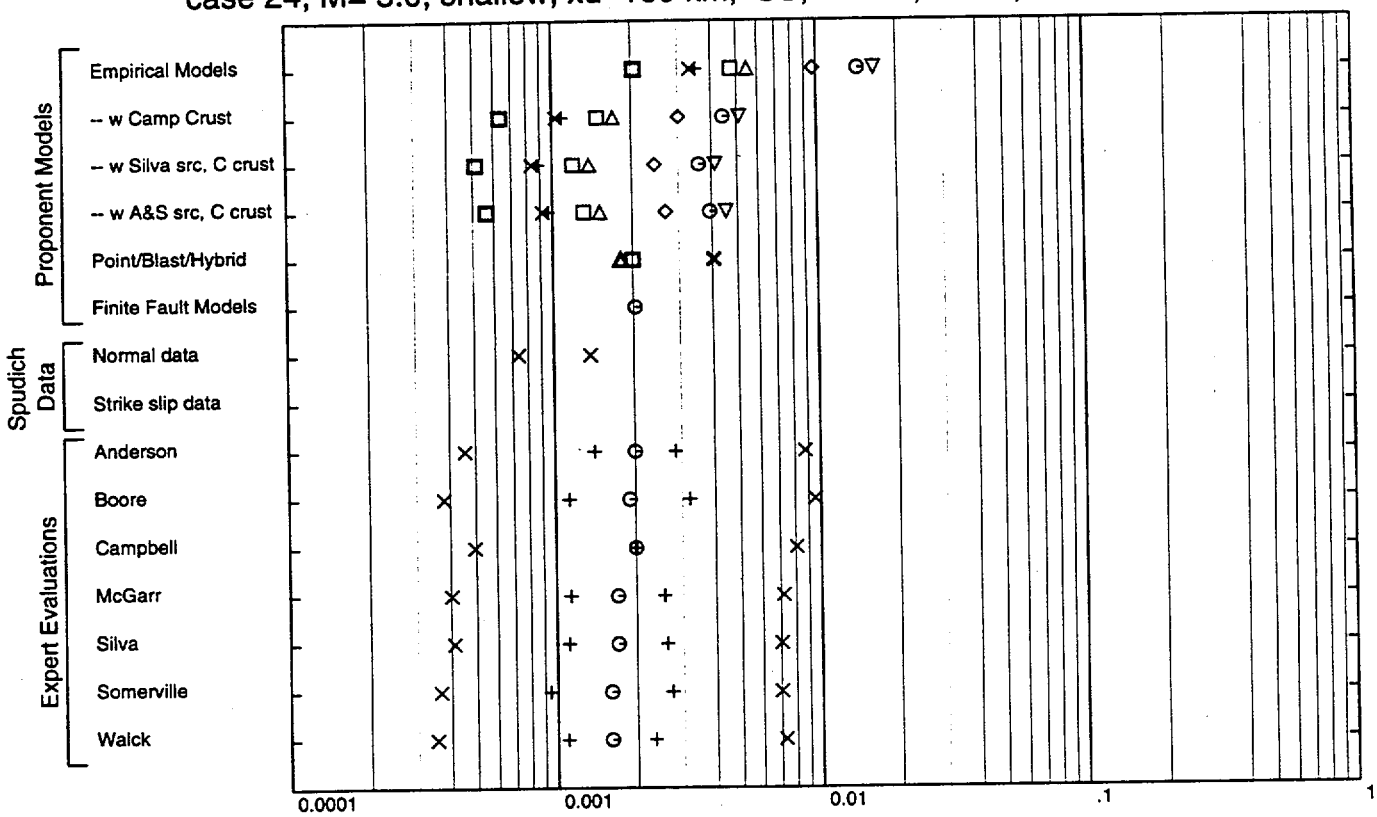


Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

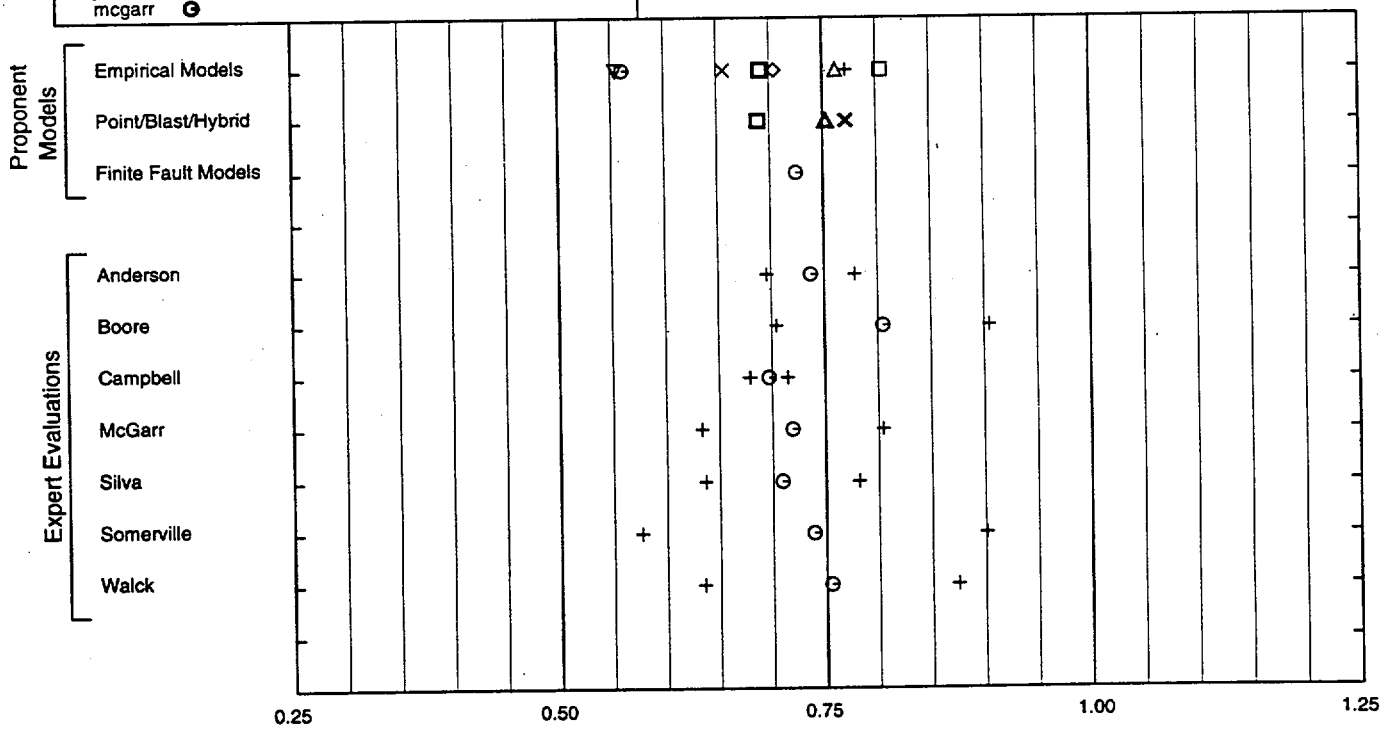
case 24, M= 5.0, shallow, xd=160 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



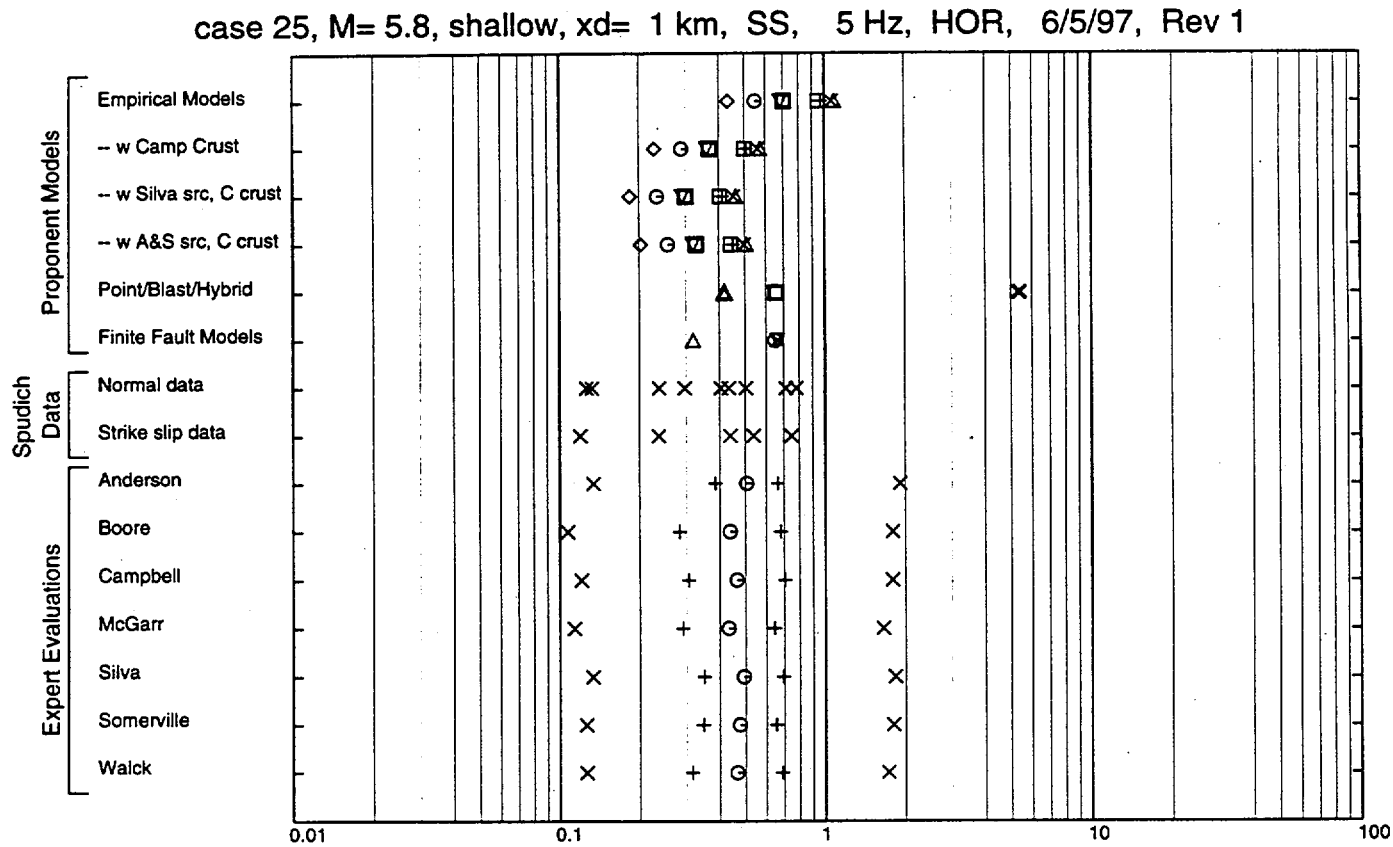
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

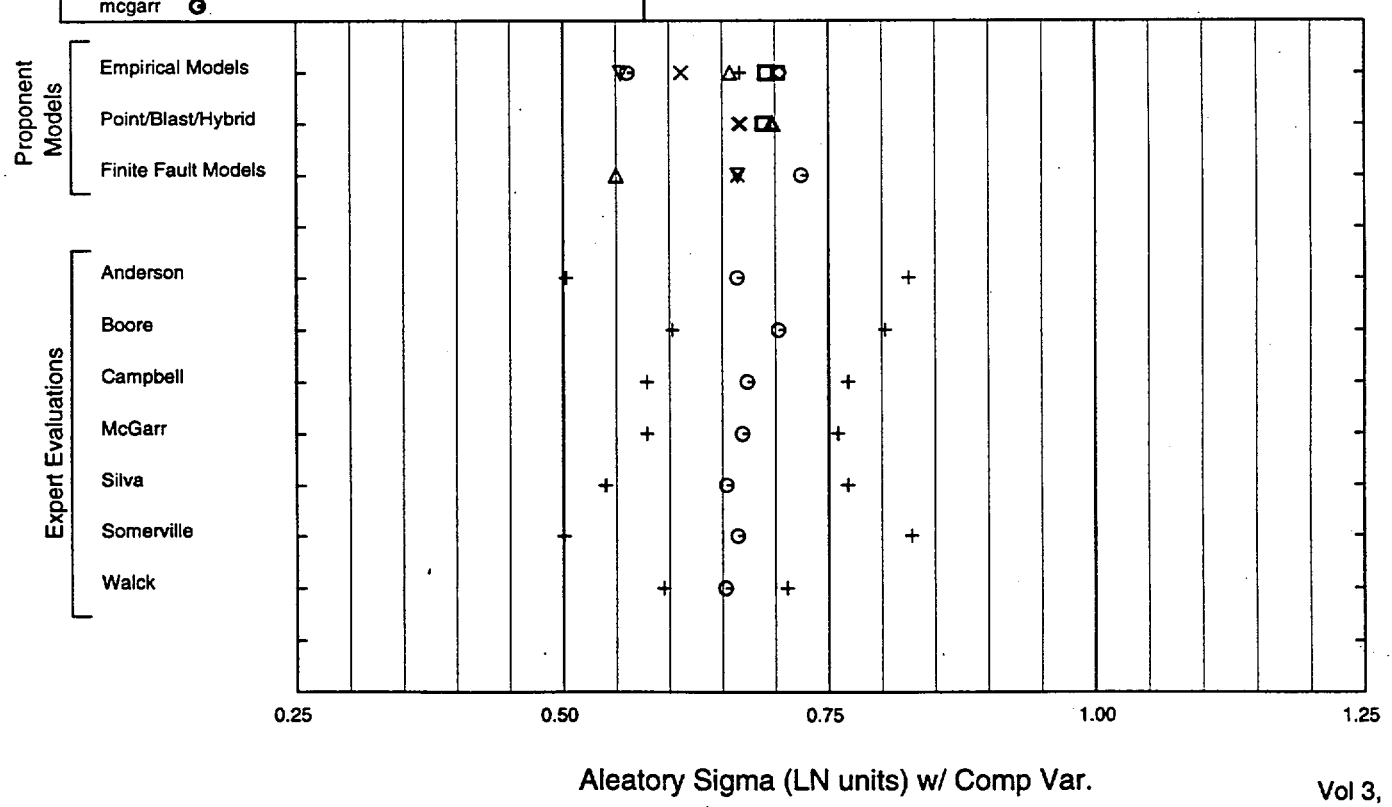


Aleatory Sigma (LN units) w/ Comp Var.

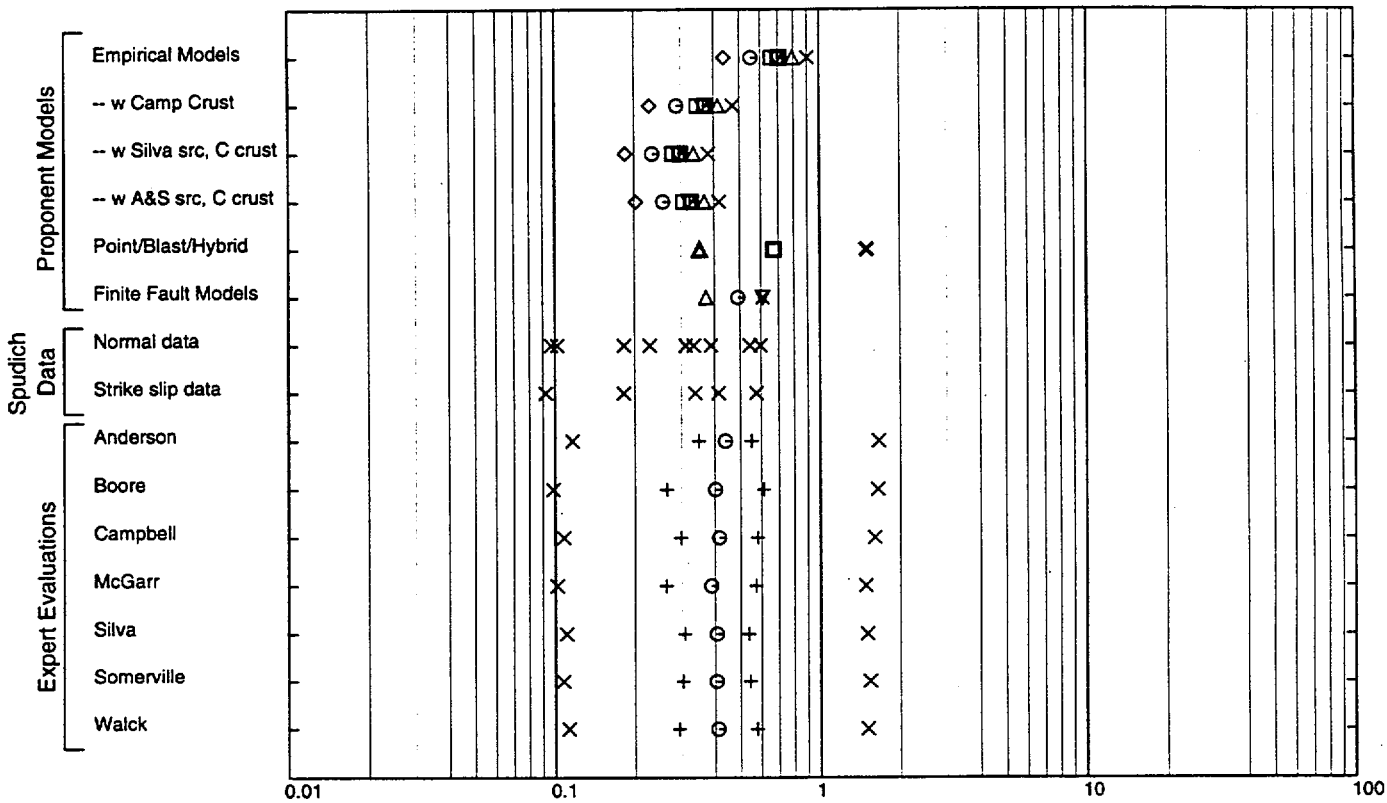


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



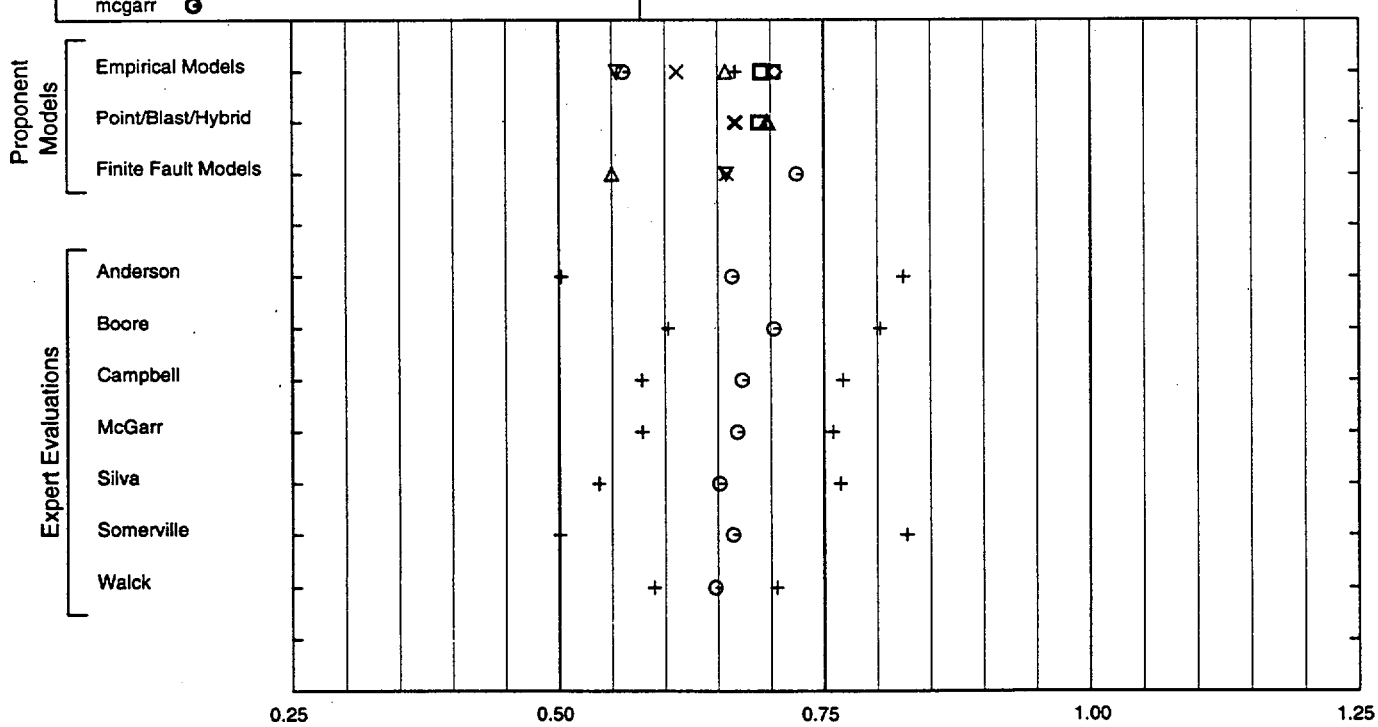
case 26, M= 5.8, shallow, xd= 5 km, HW, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

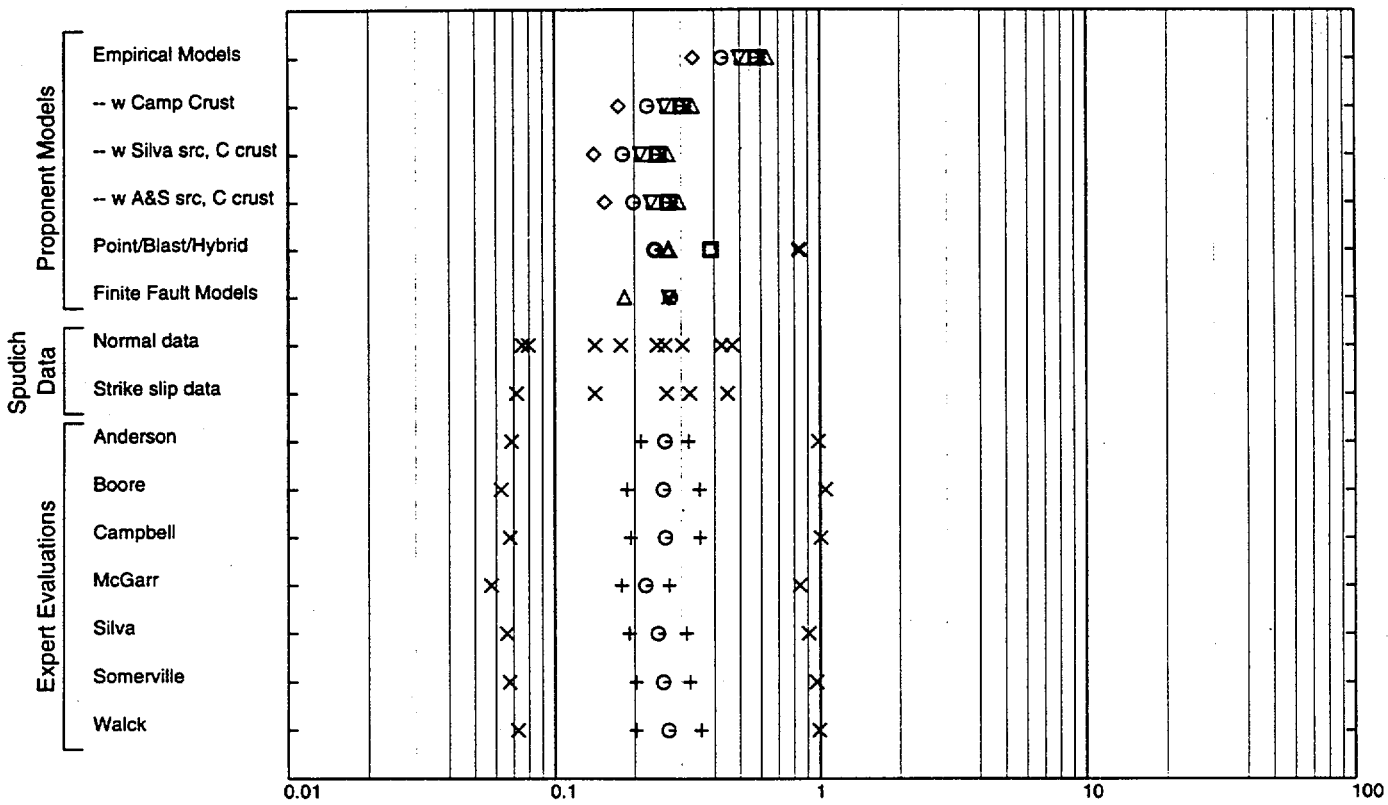
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

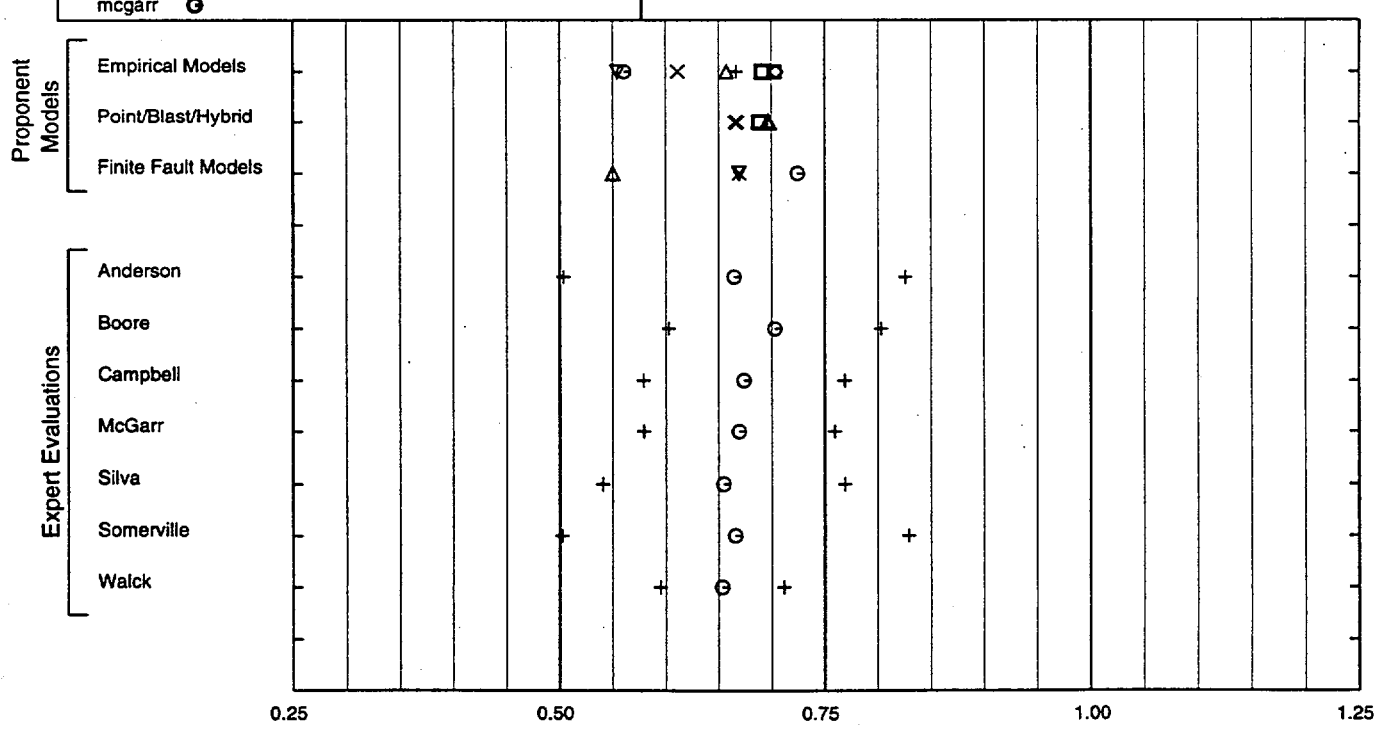
case 27, M= 5.8, shallow, xd= -5 km, FW, 5 Hz, HOR, 6/5/97, Rev 1



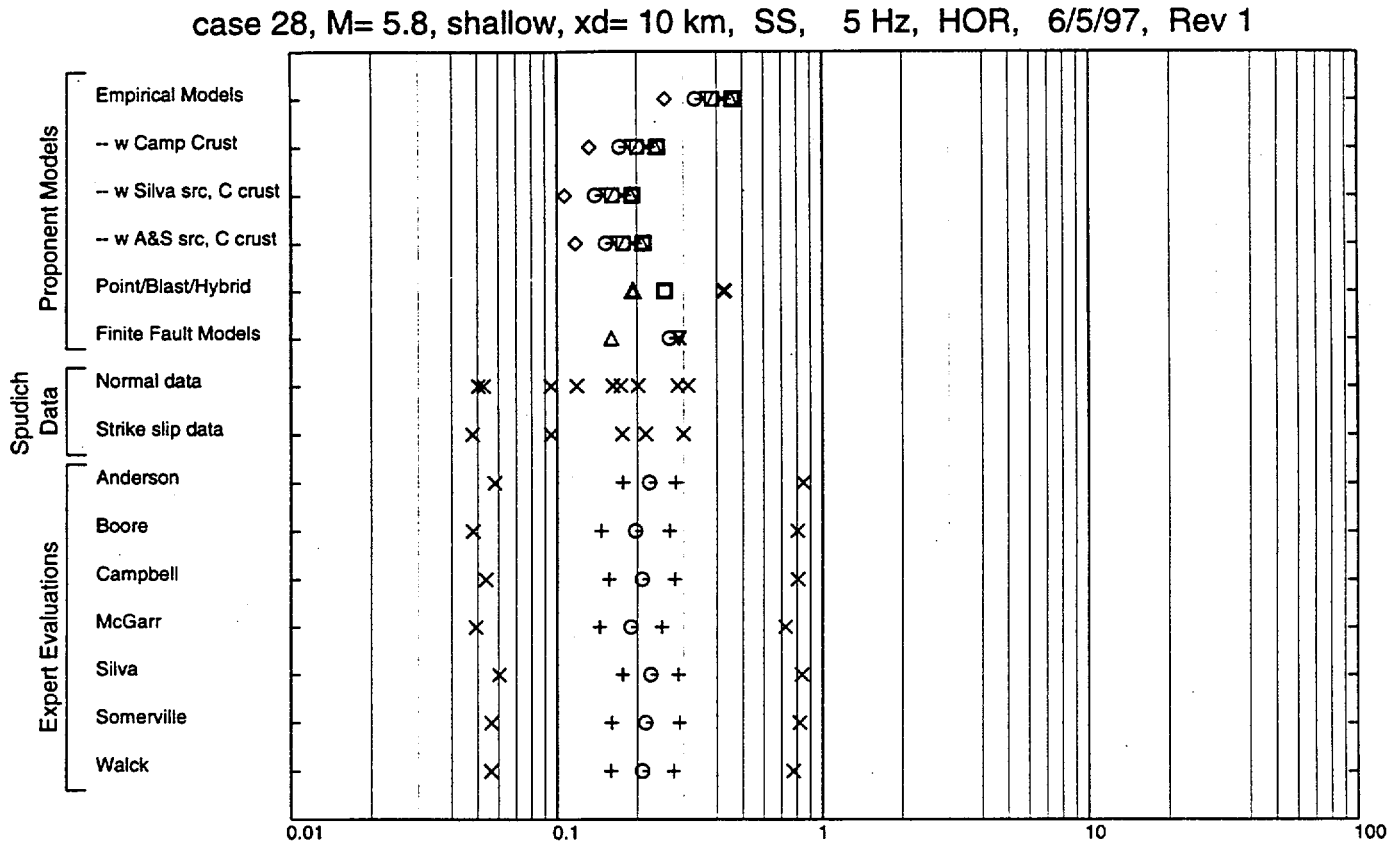
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

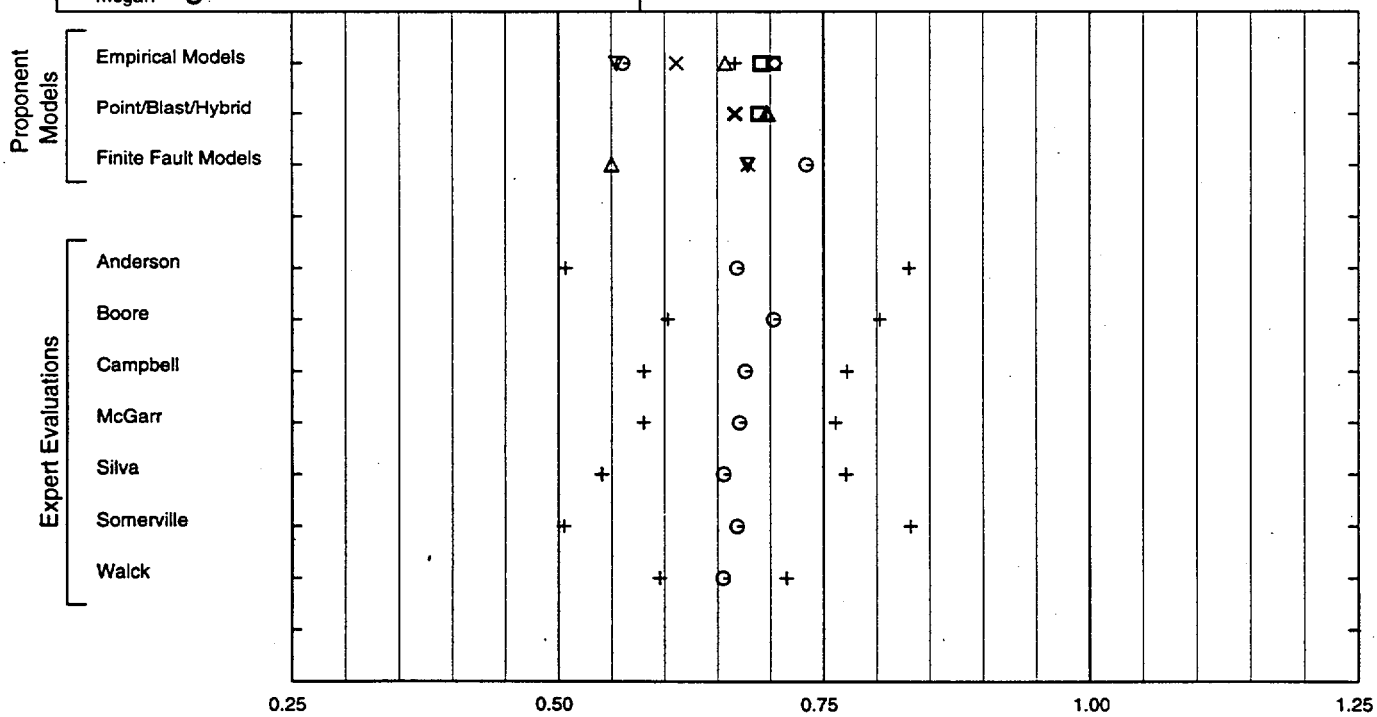


Aleatory Sigma (LN units) w/ Comp Var.

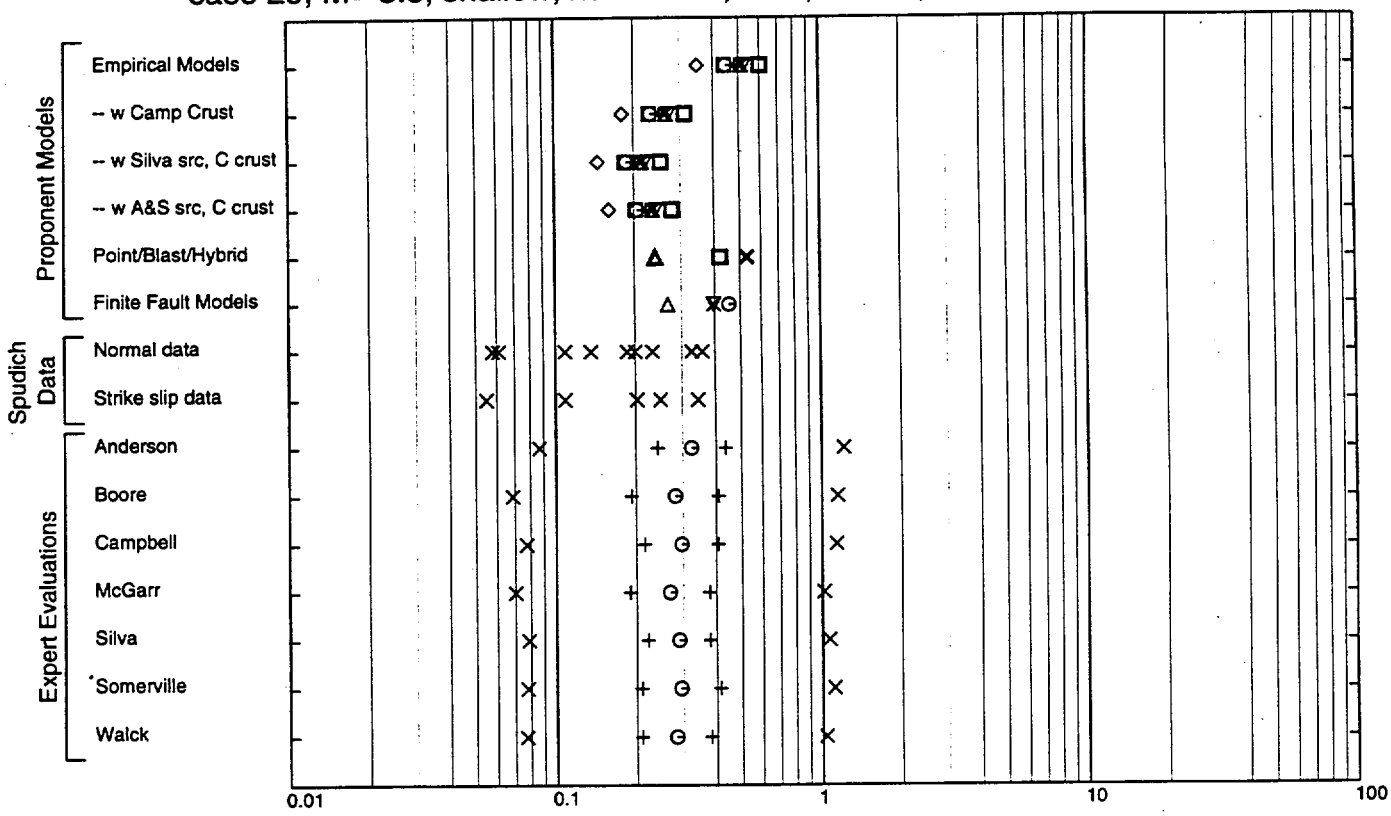


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



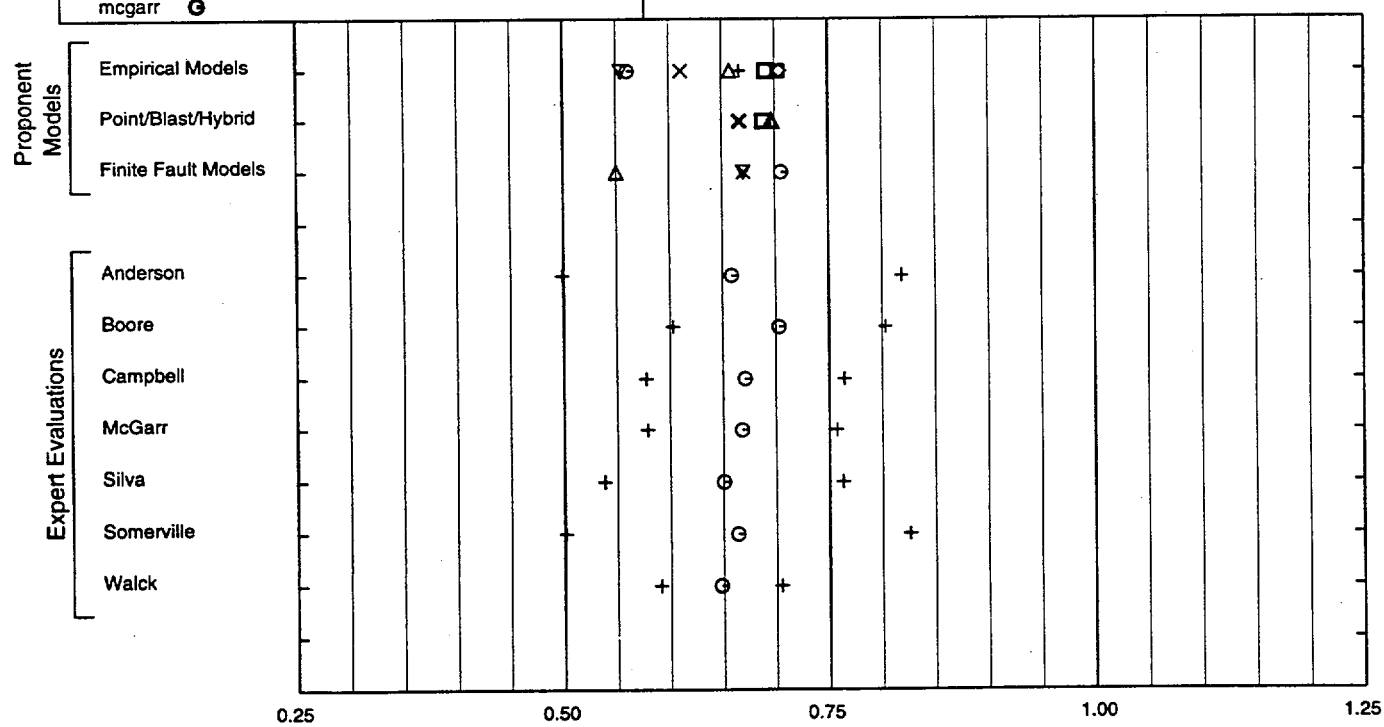
case 29, M= 5.8, shallow, xd= 10 km, HW, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

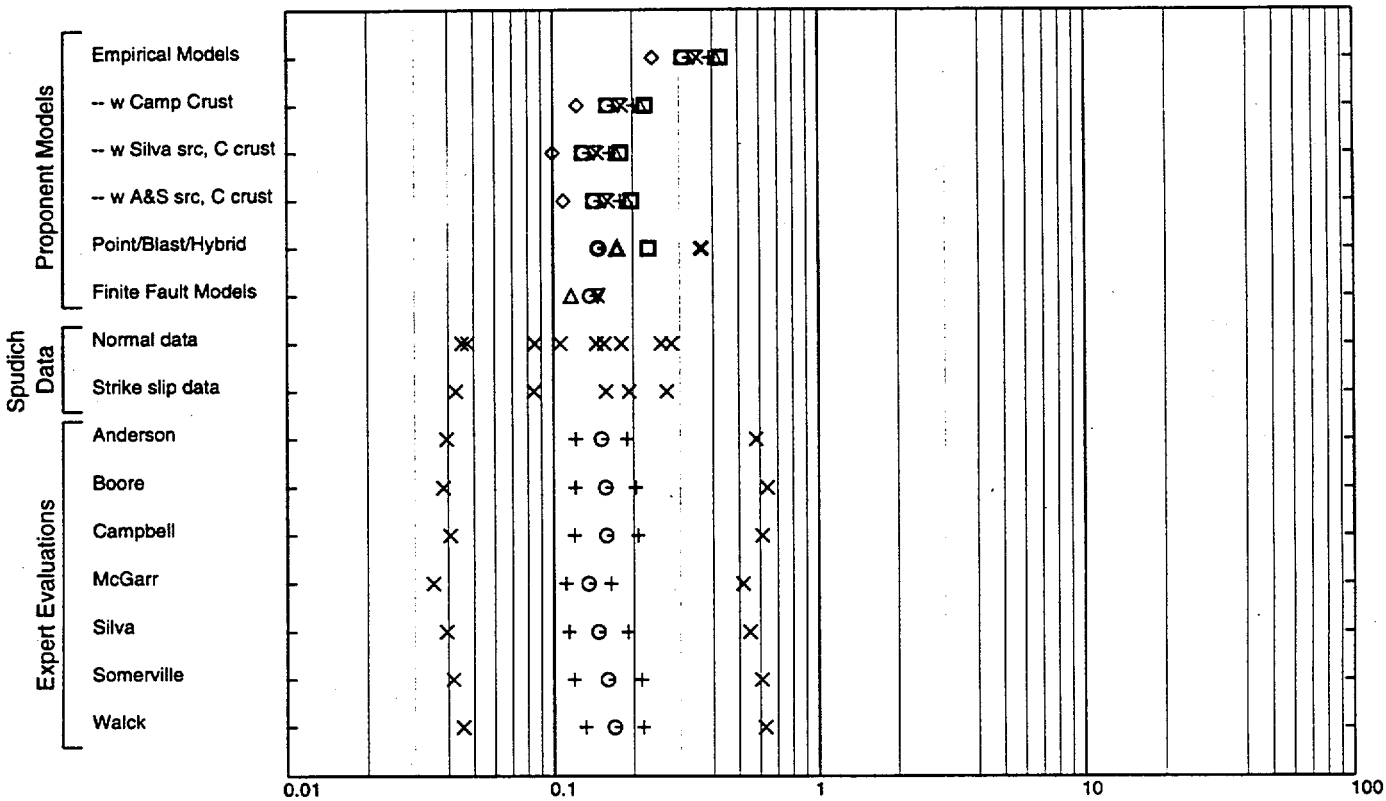
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

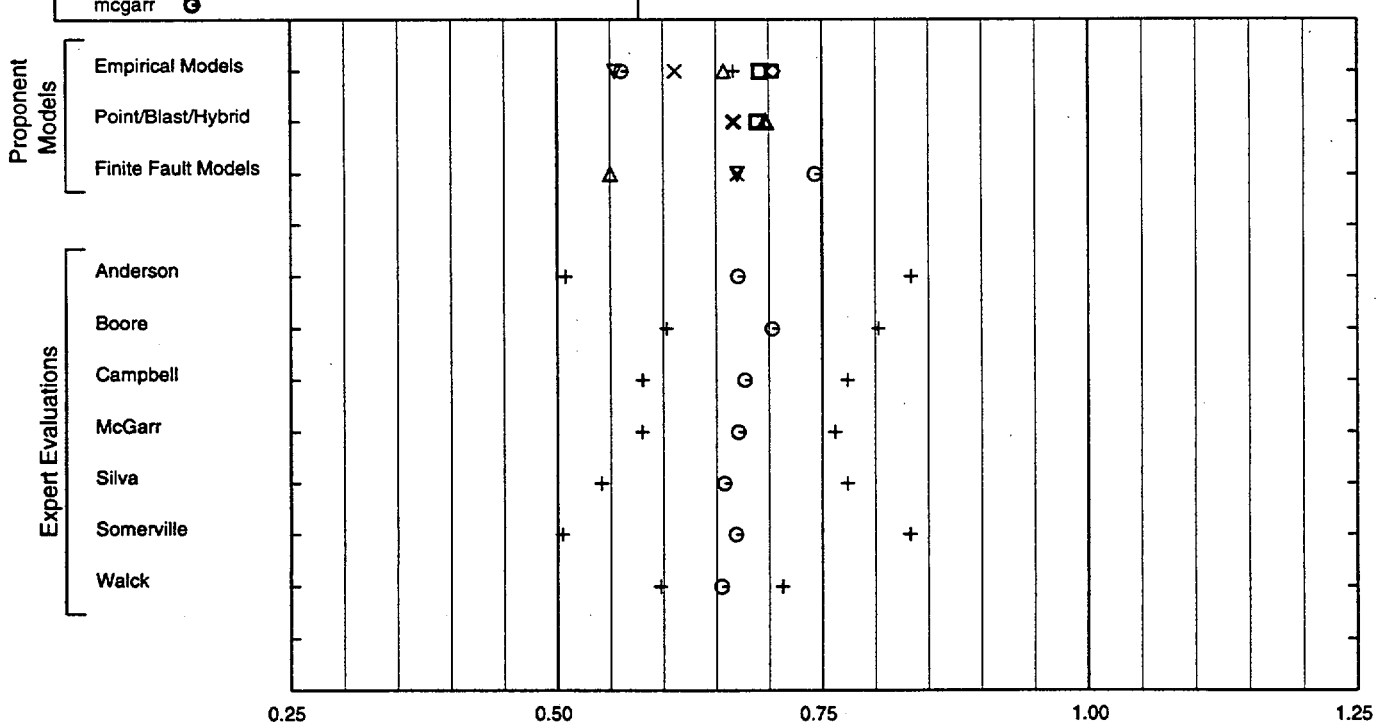
case 30, M= 5.8, shallow, xd=-10 km, FW, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

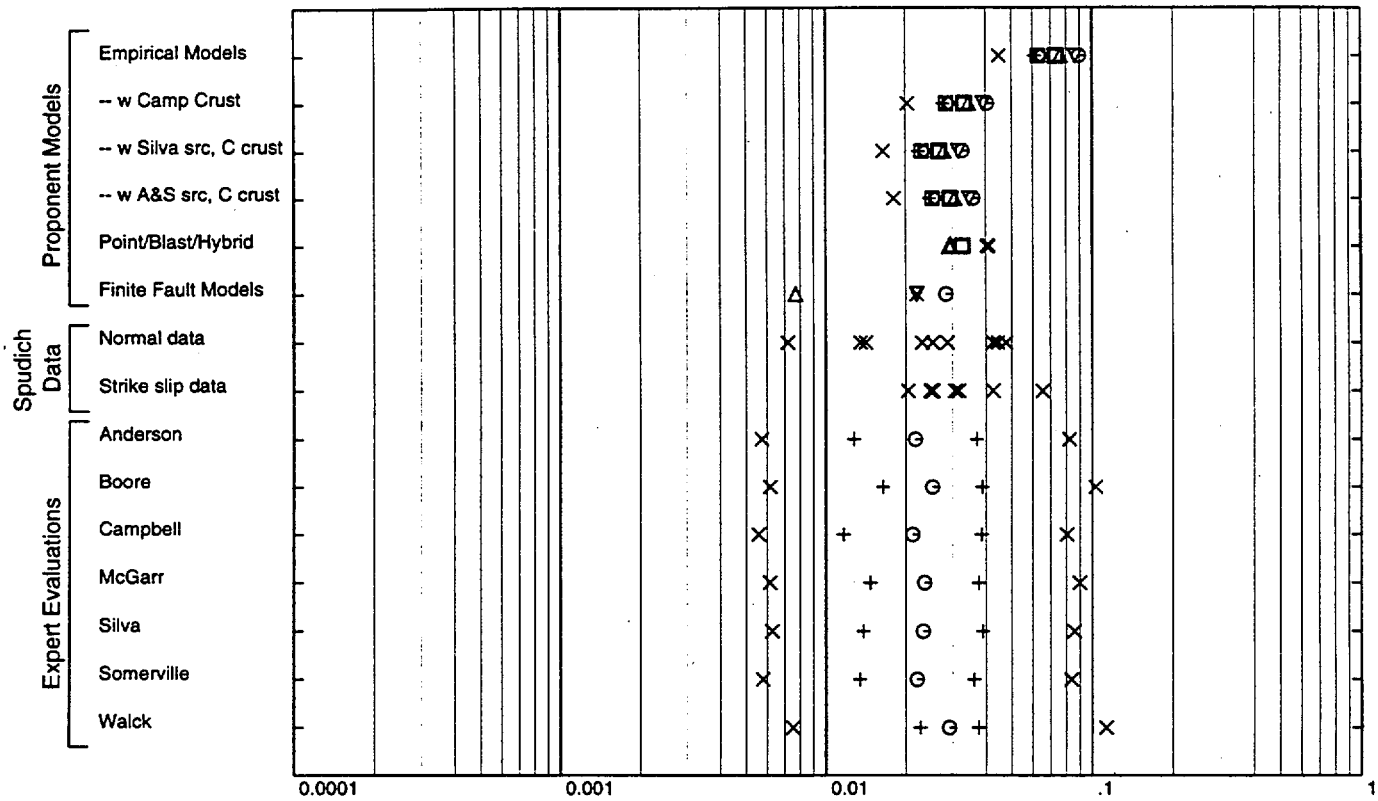
LEGEND

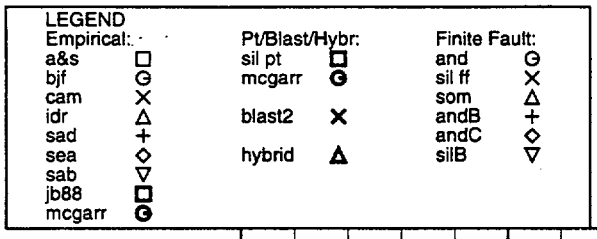
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



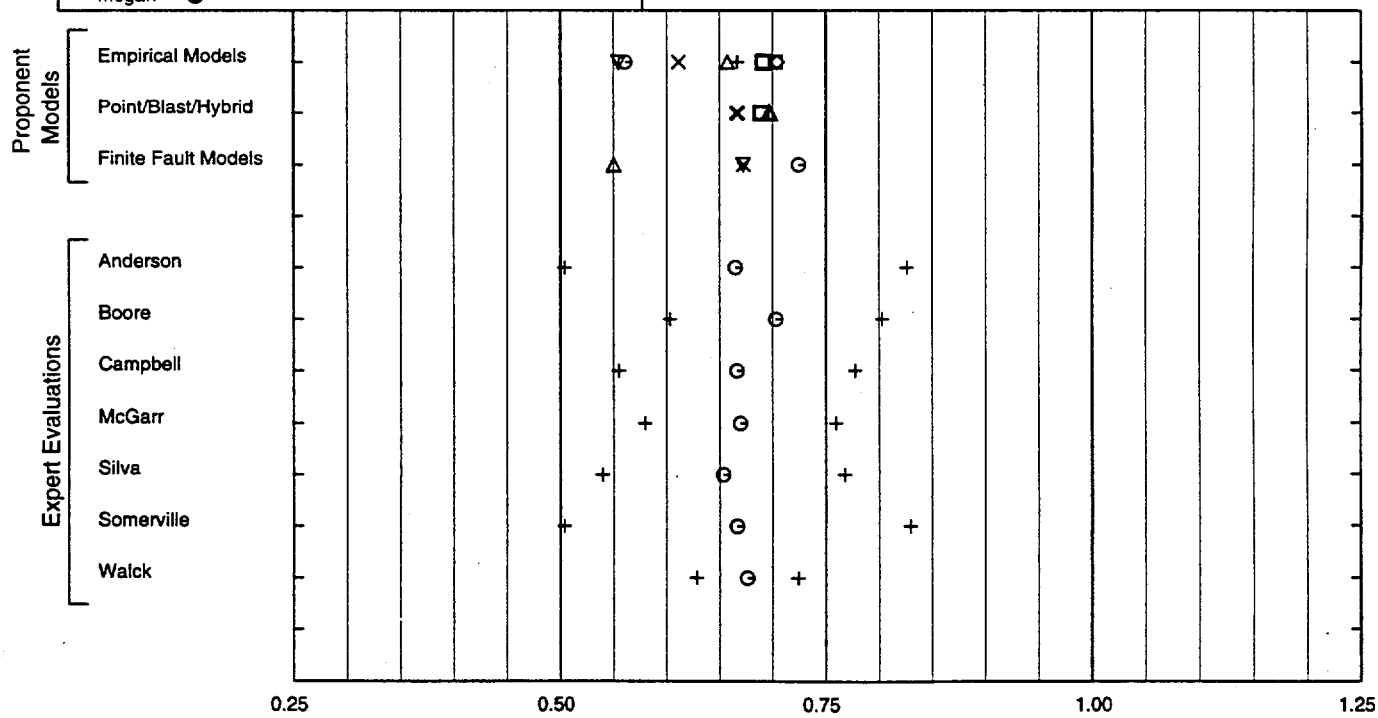
Aleatory Sigma (LN units) w/ Comp Var.

case 31, M= 5.8, shallow, xd= 50 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



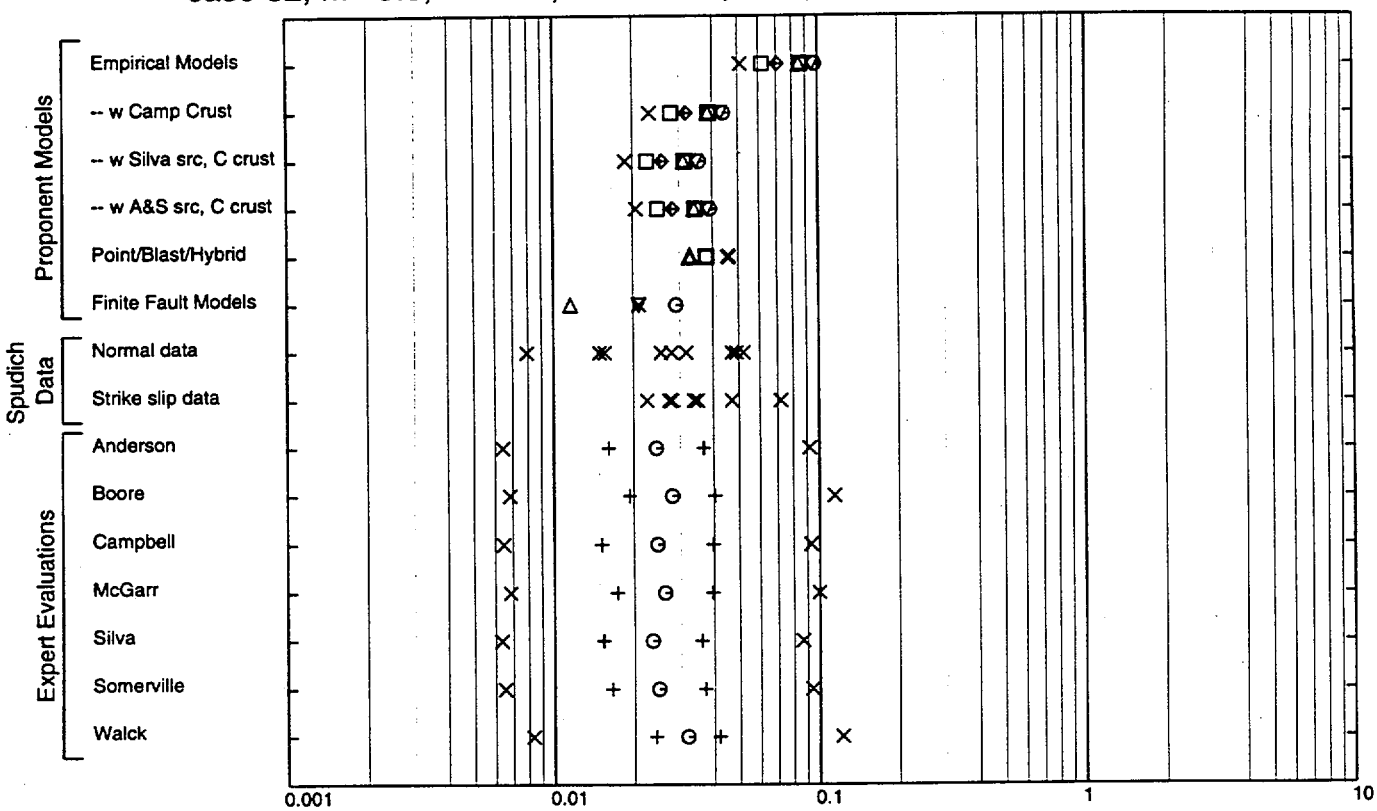


Spectral Acceleration (g)



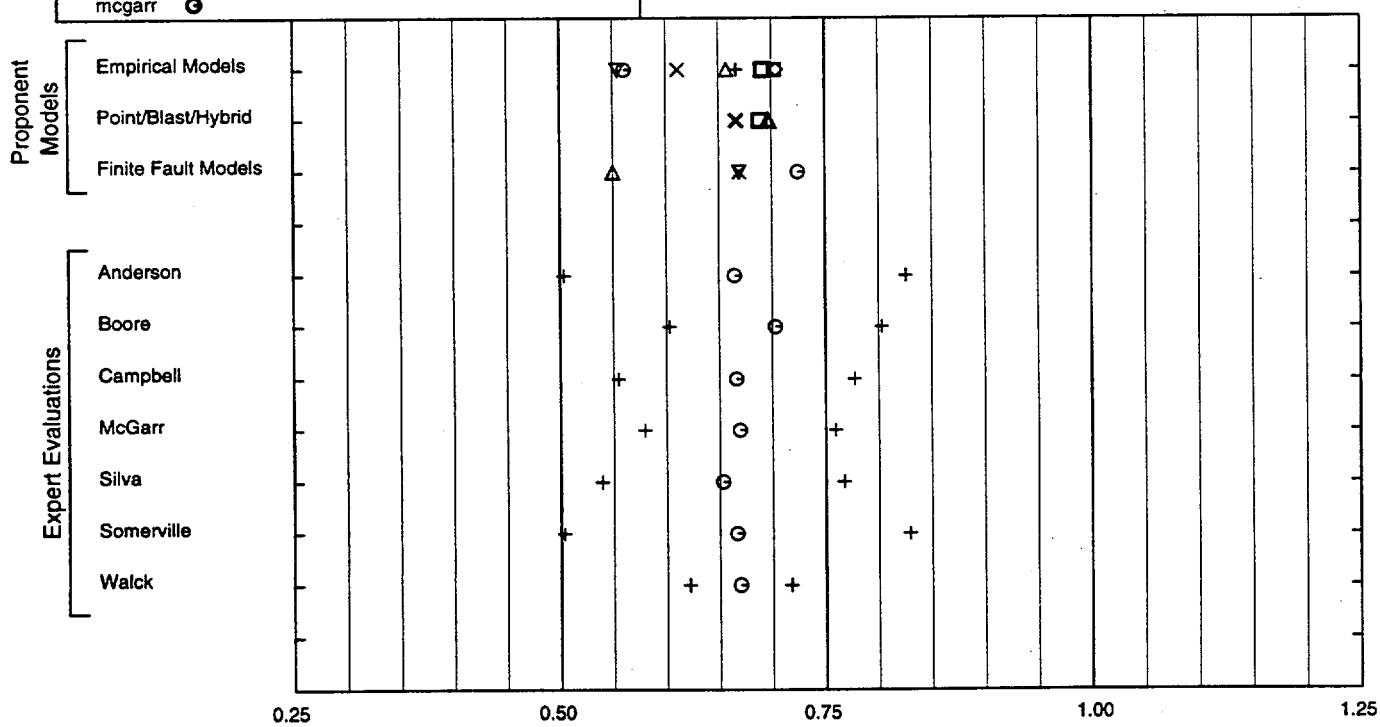
Aleatory Sigma (LN units) w/ Comp Var.

case 32, M= 5.8, shallow, xd= 50 km, HW, 5 Hz, HOR, 6/5/97, Rev 1

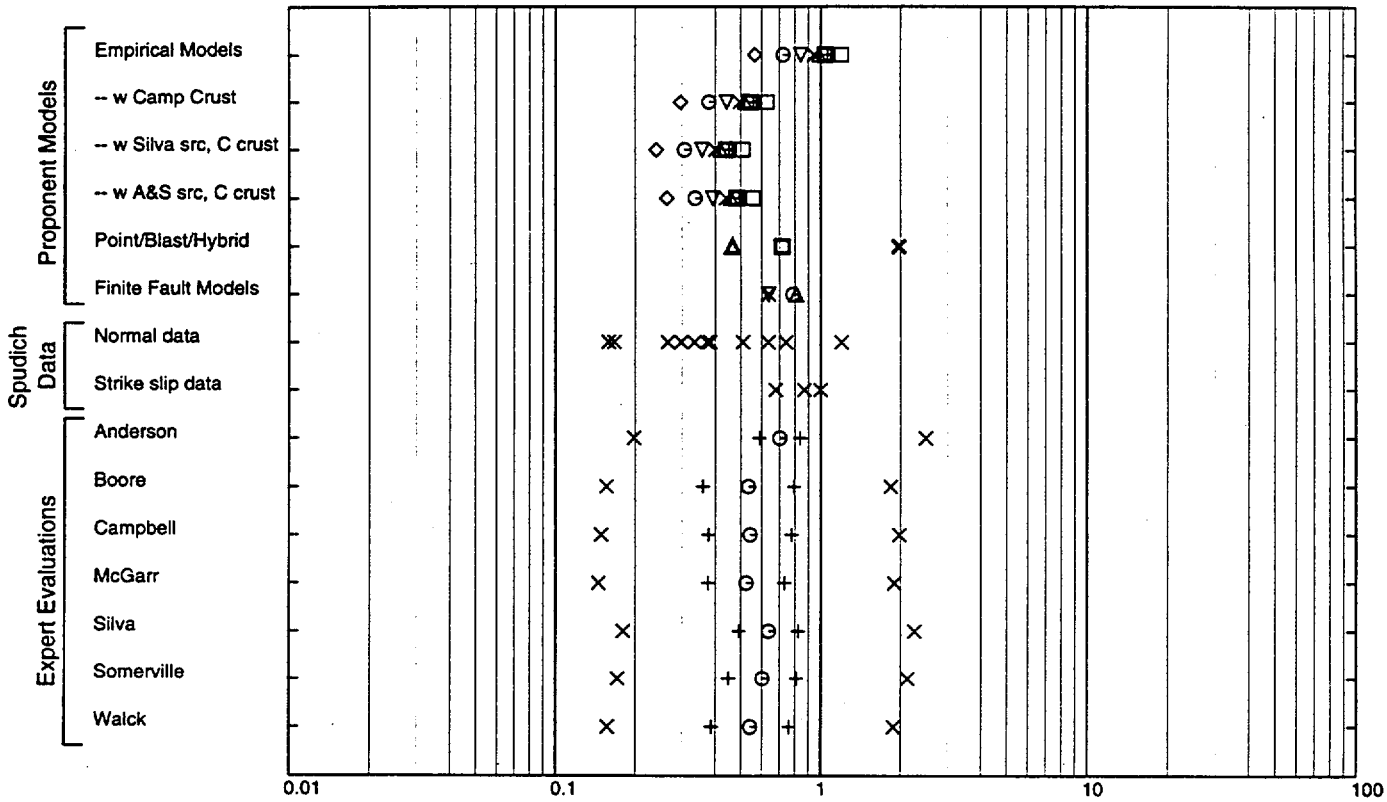


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



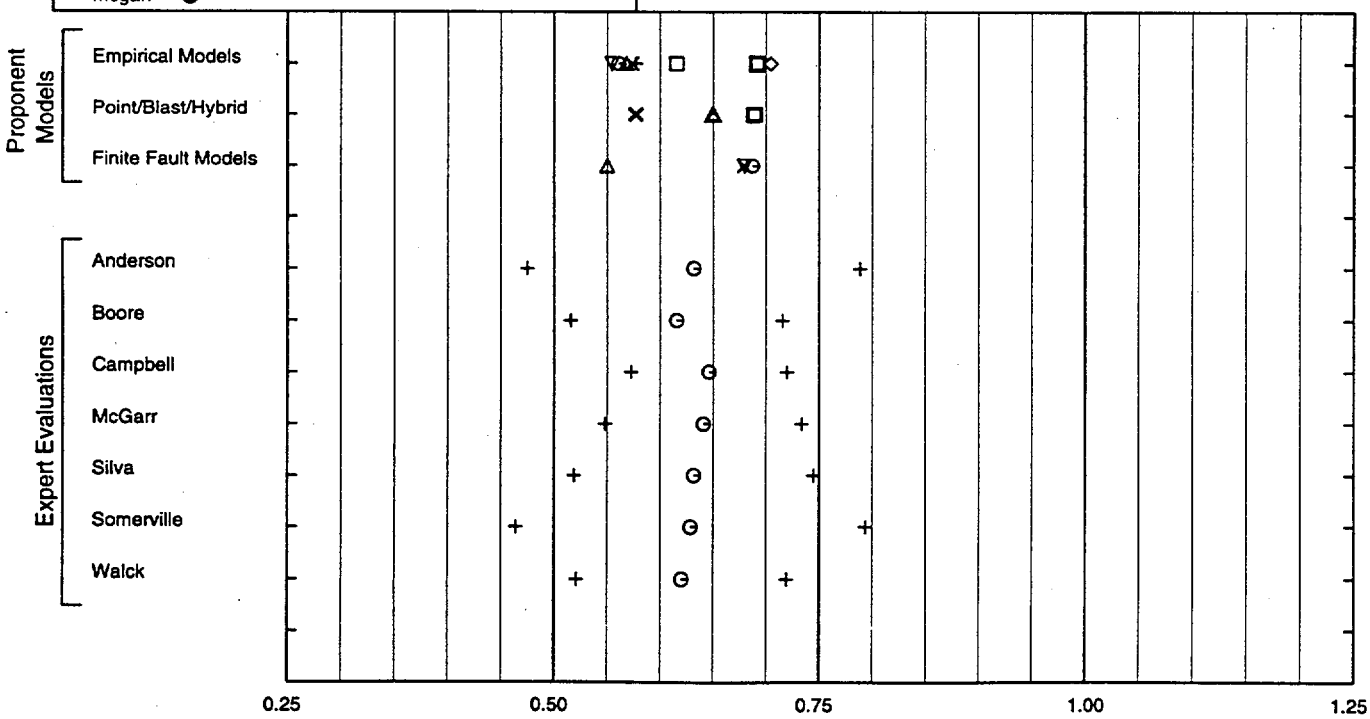
case 33, M= 6.5, shallow, xd= 5 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

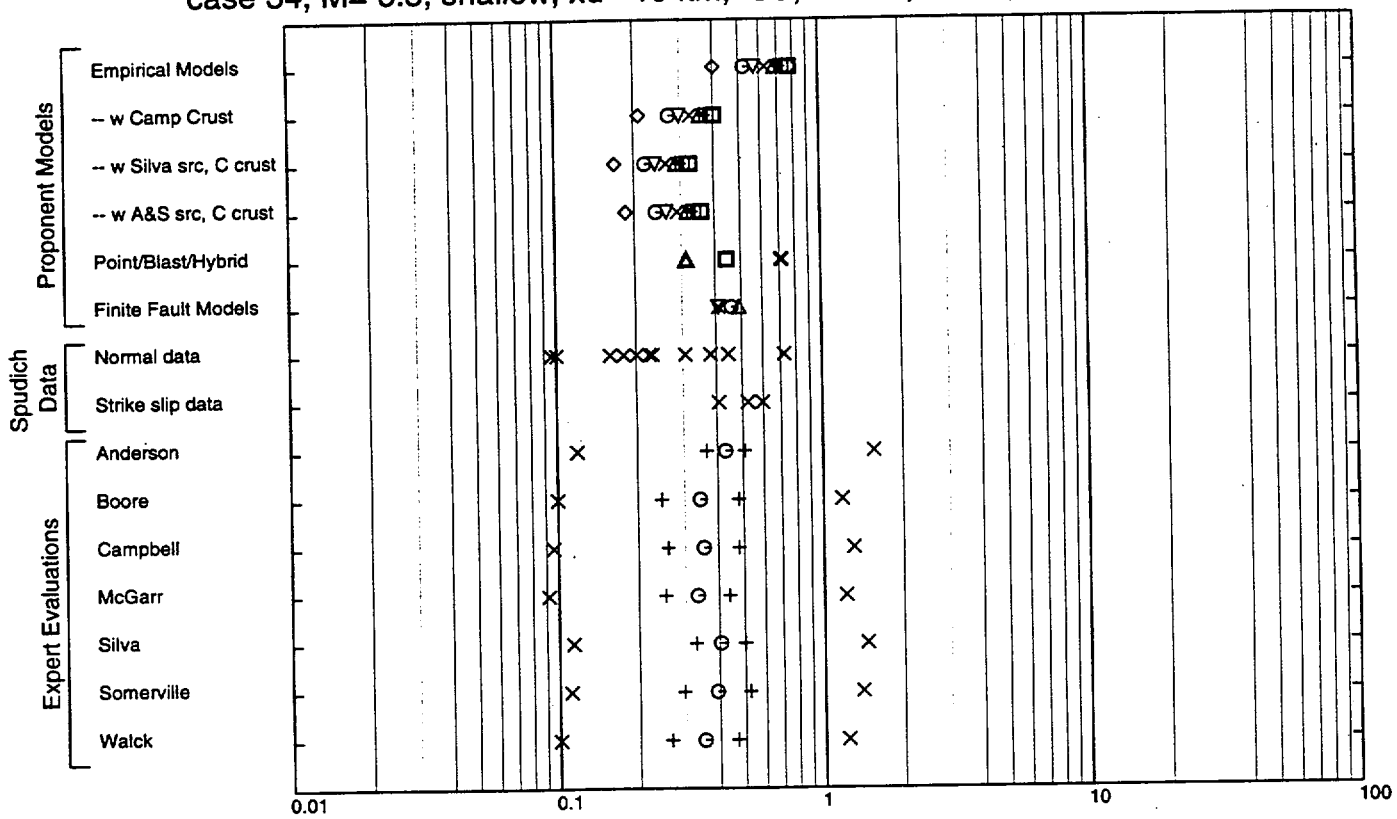
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

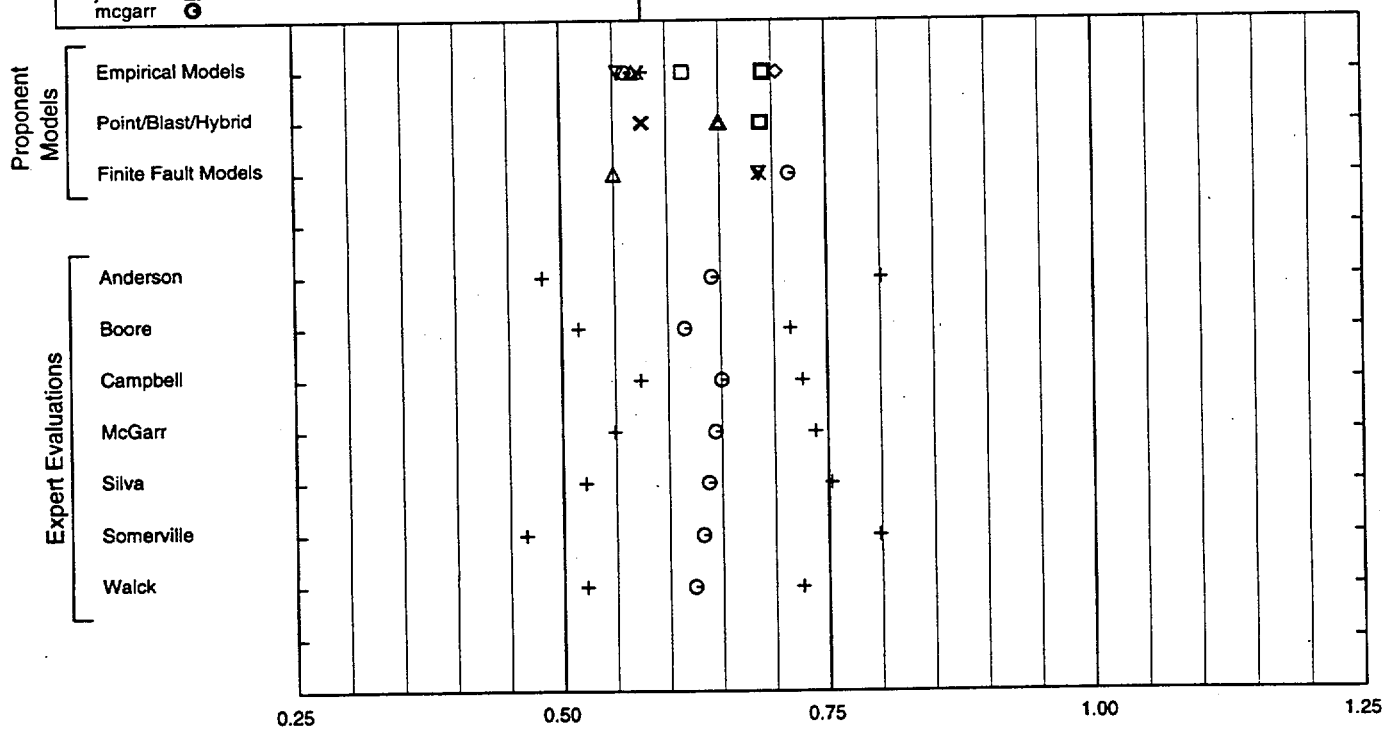
case 34, M= 6.5, shallow, xd= 10 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

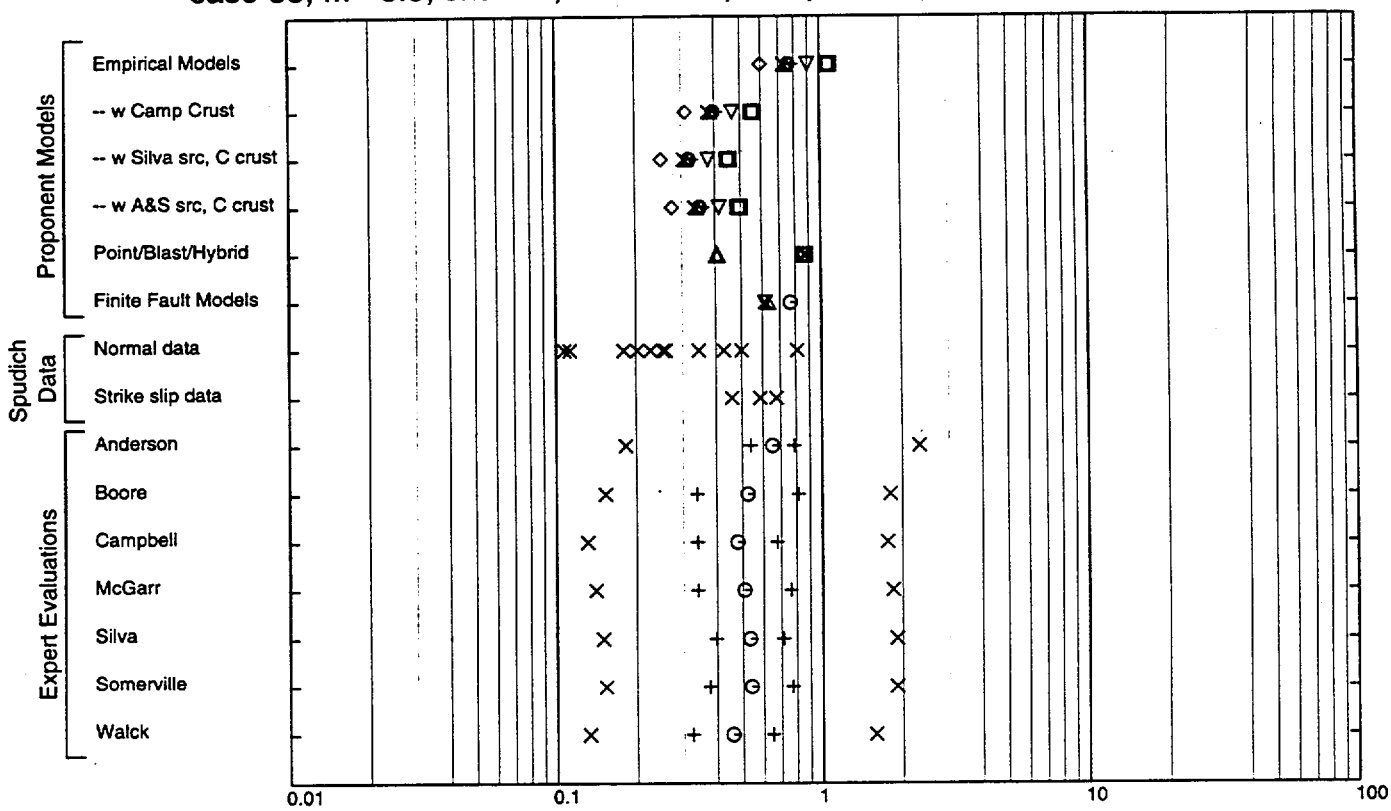
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

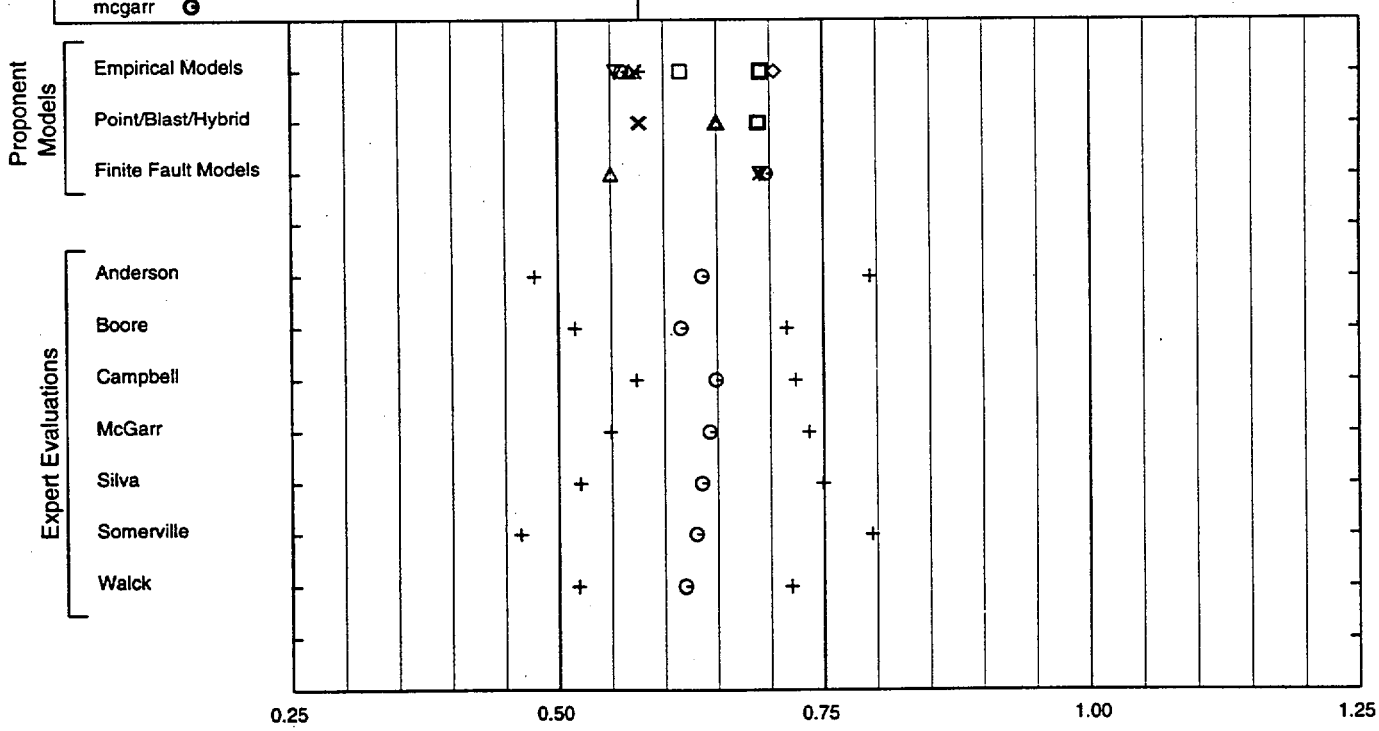
case 35, M= 6.5, shallow, xd= 10 km, HW, 5 Hz, HOR, 6/5/97, Rev 1



LEGEND

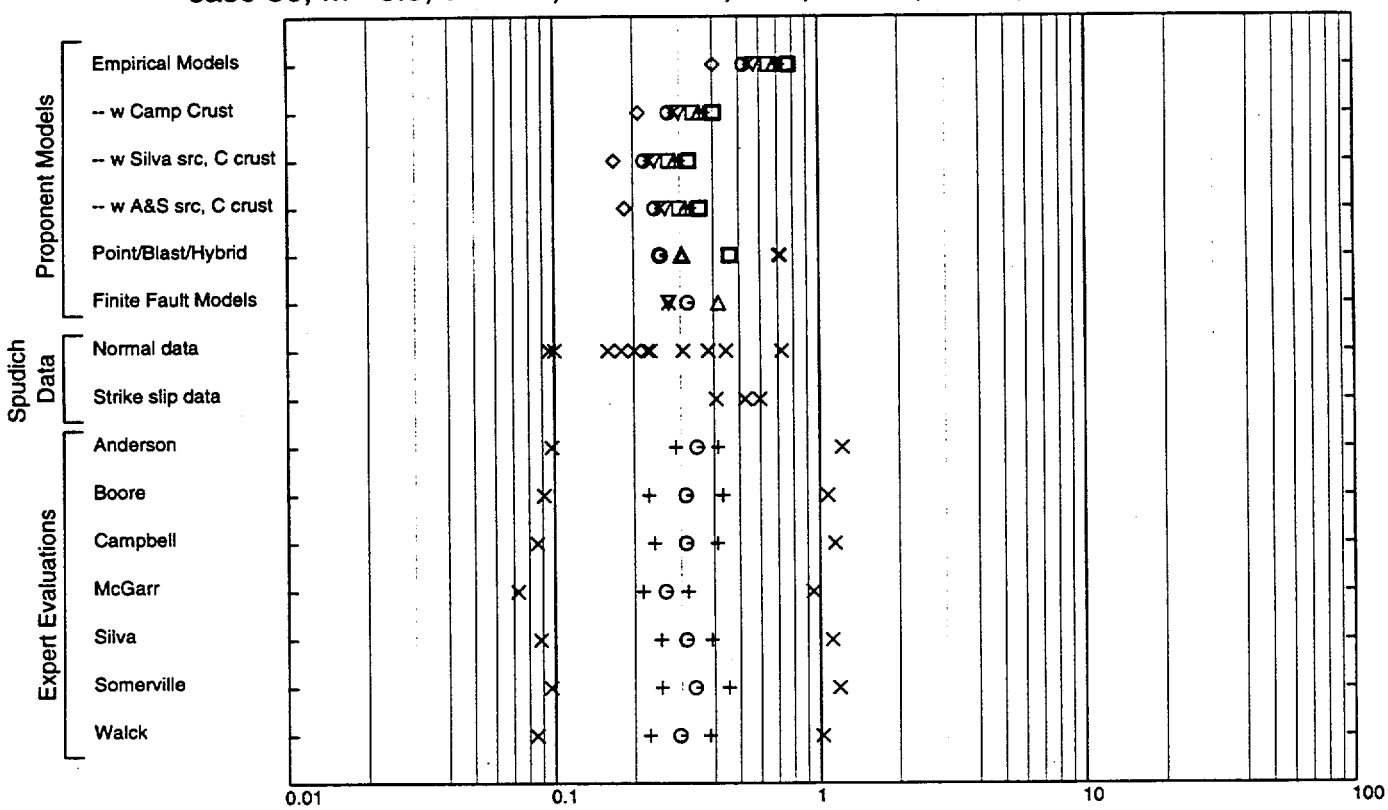
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

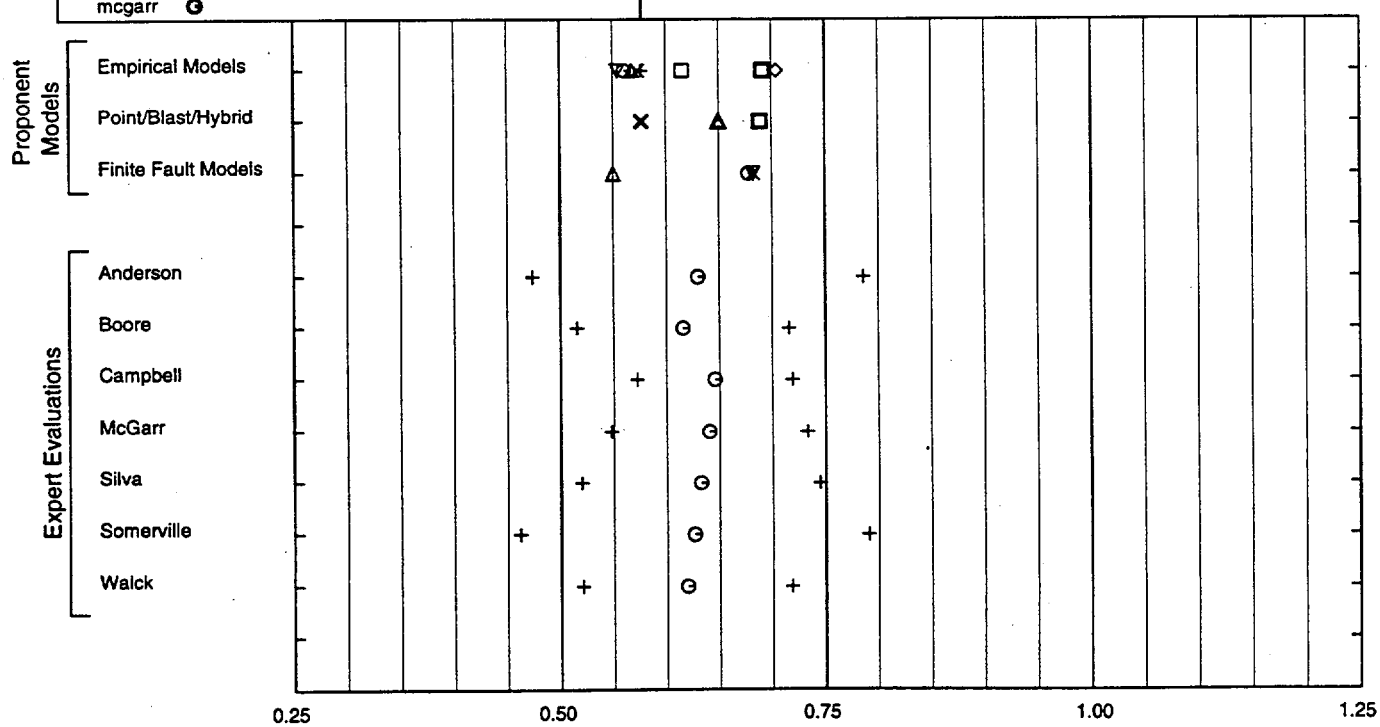
case 36, M= 6.5, shallow, xd=-10 km, FW, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

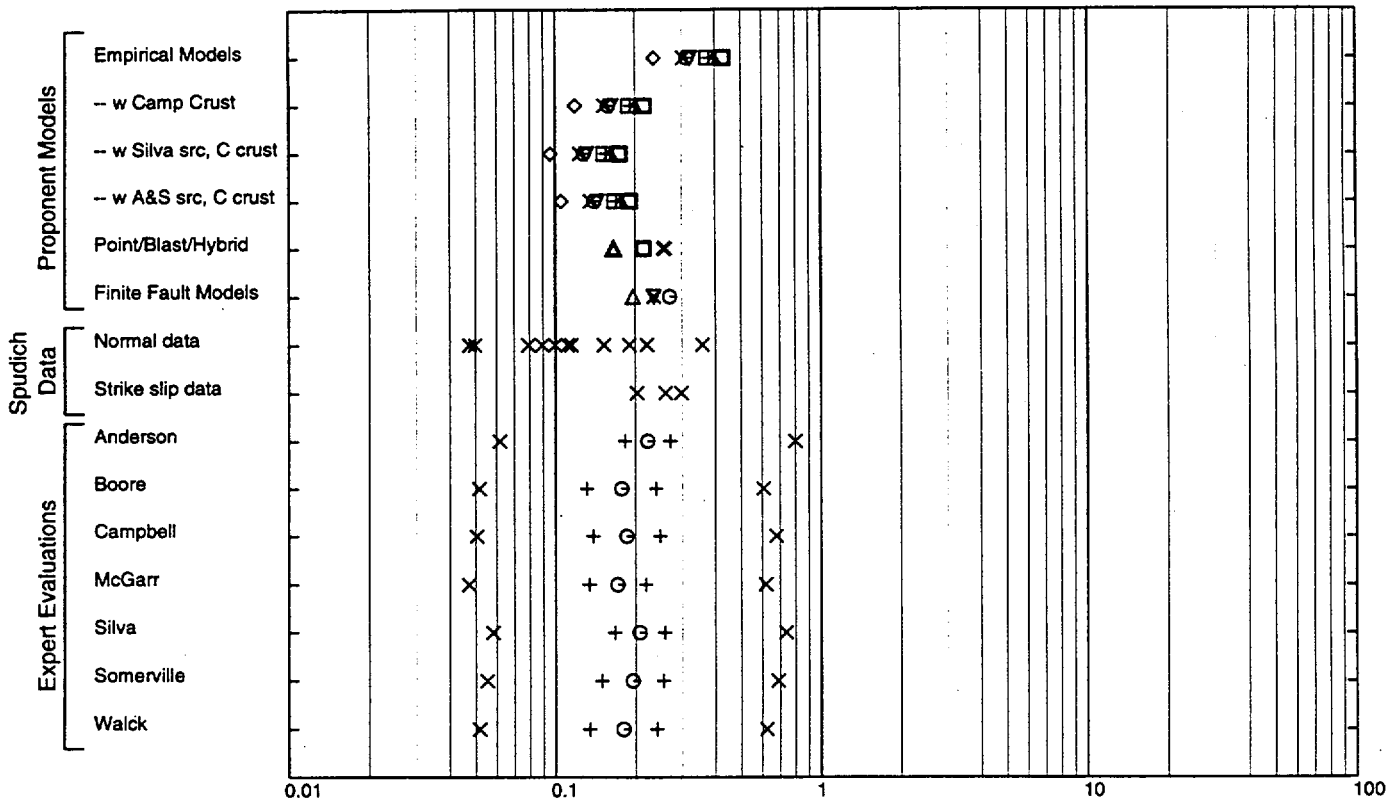
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

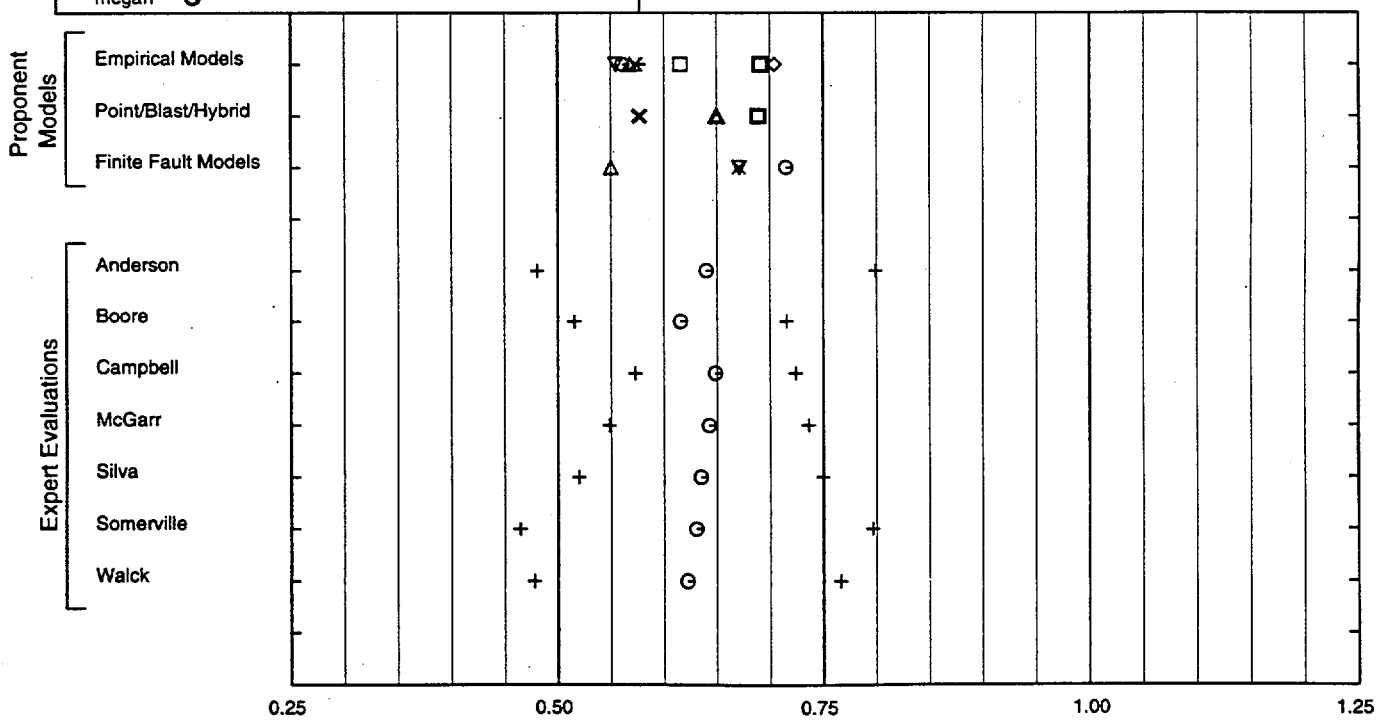
case 37, M= 6.5, shallow, xd= 20 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

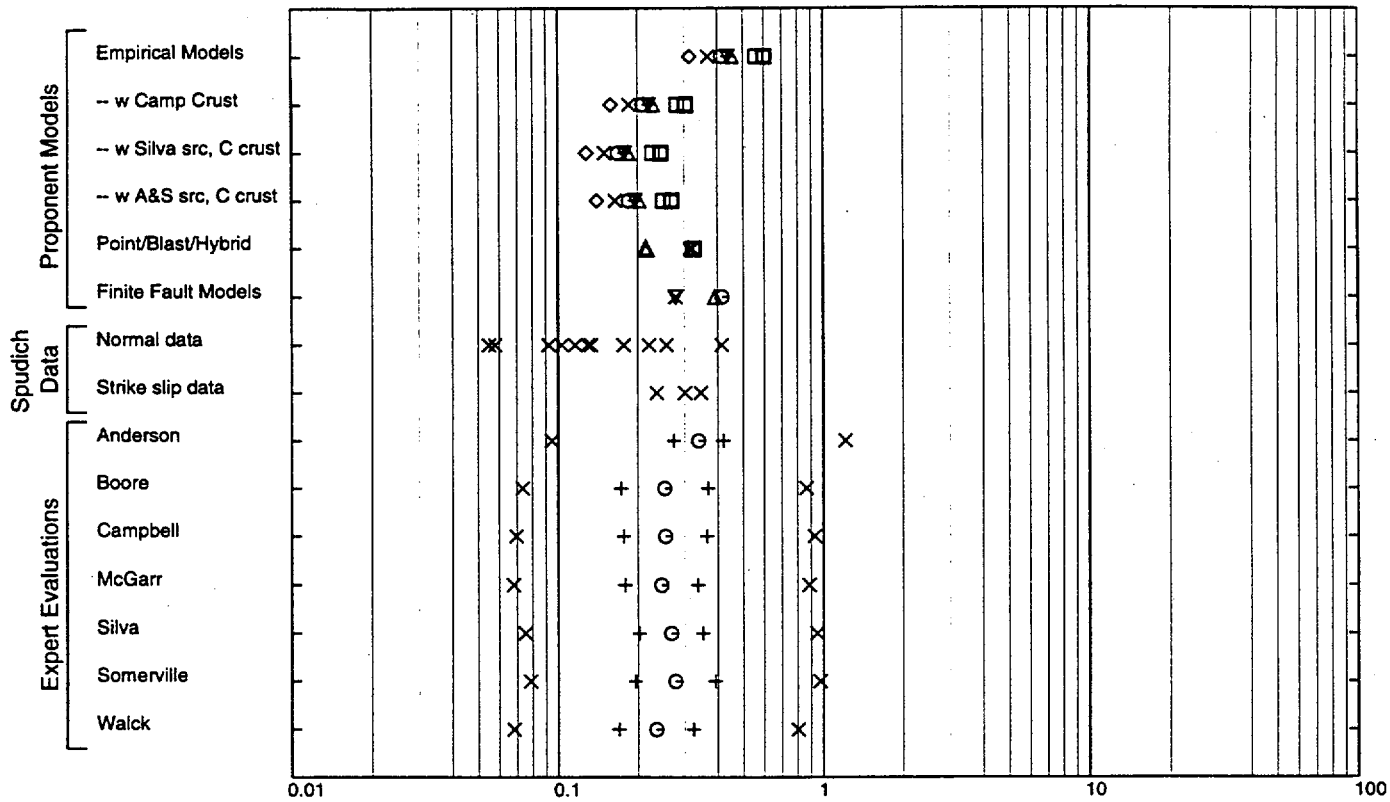
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

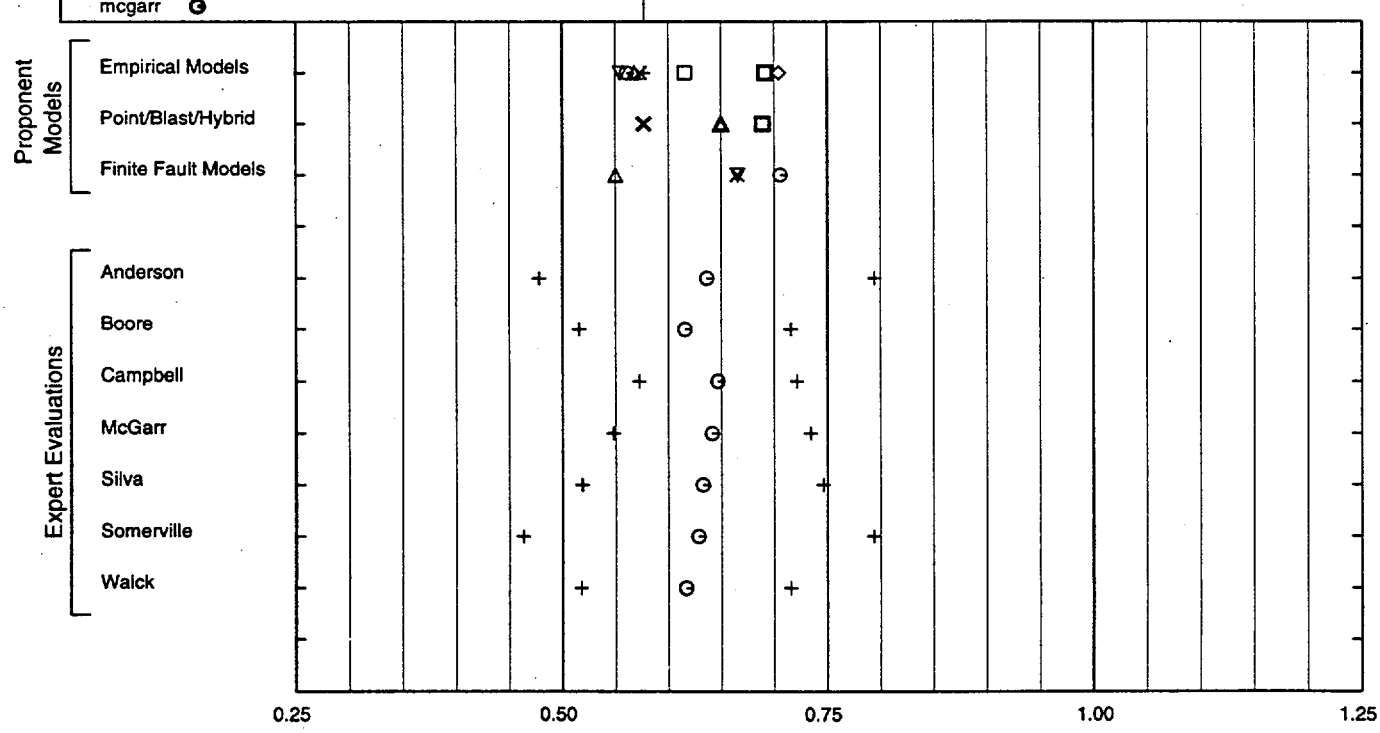
case 38, M= 6.5, shallow, xd= 20 km, HW, 5 Hz, HOR, 6/5/97, Rev 1



LEGEND

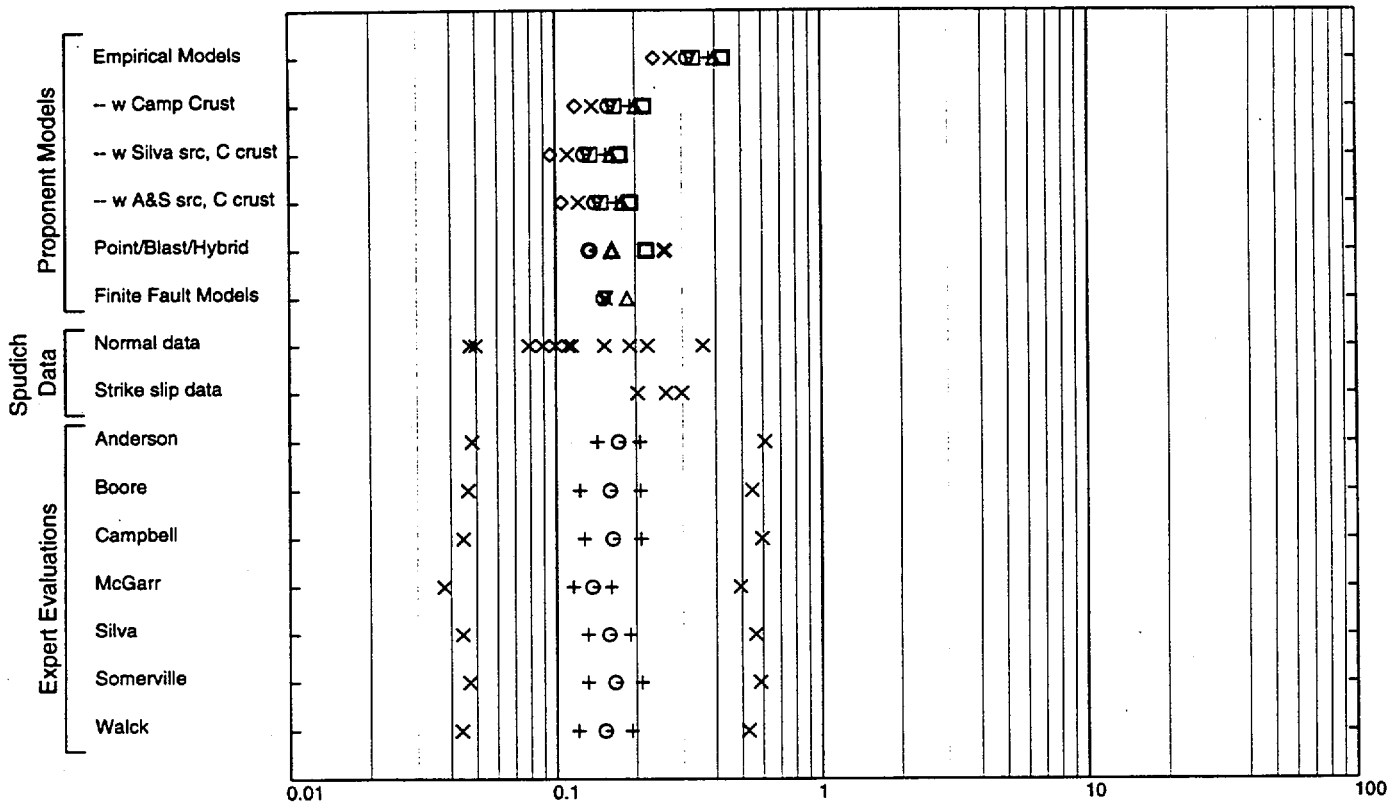
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

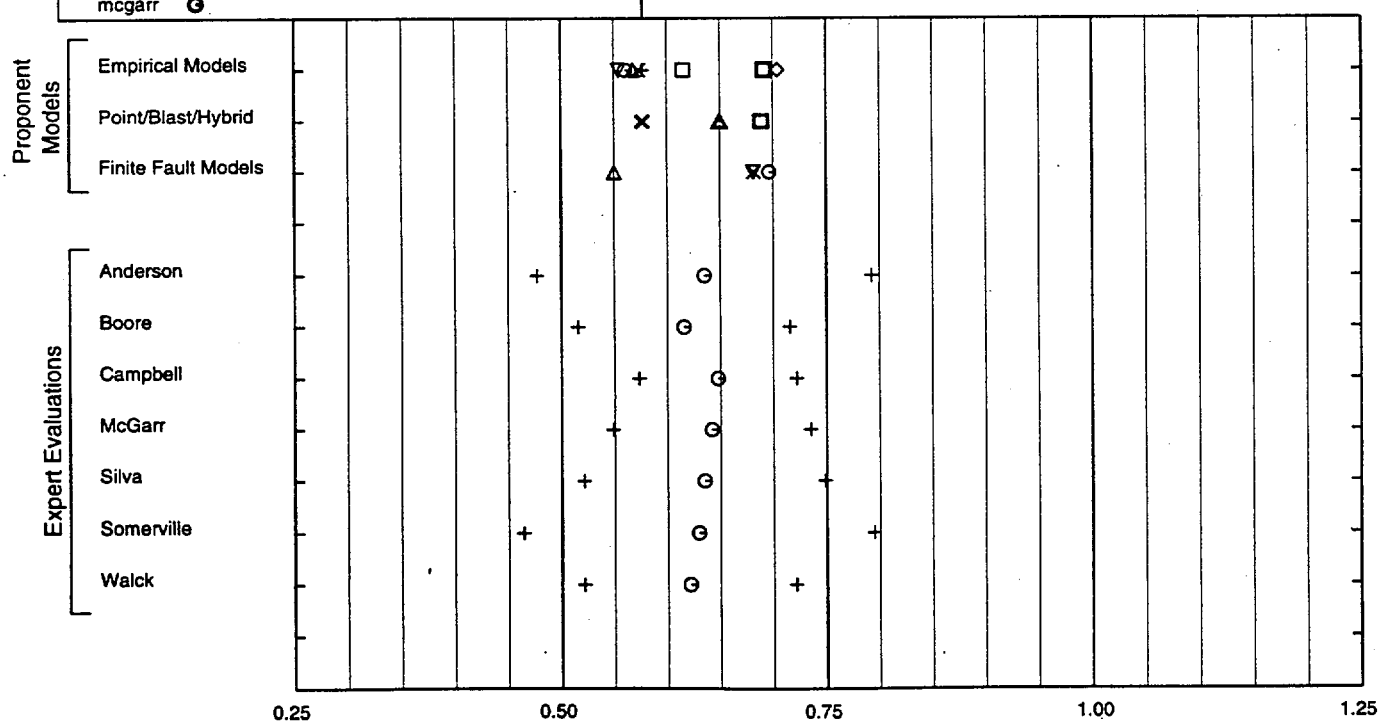
case 39, M= 6.5, shallow, xd=-20 km, FW, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

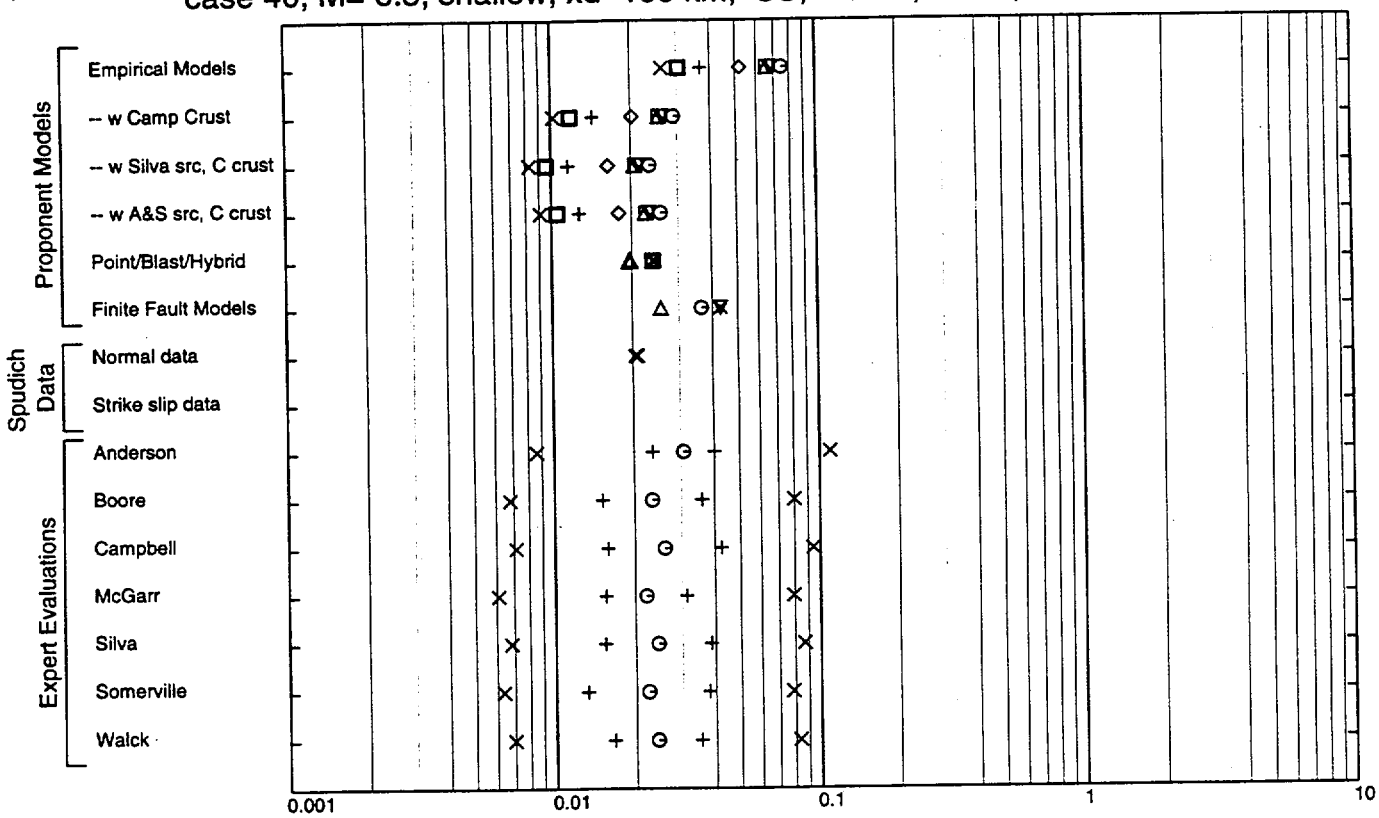
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

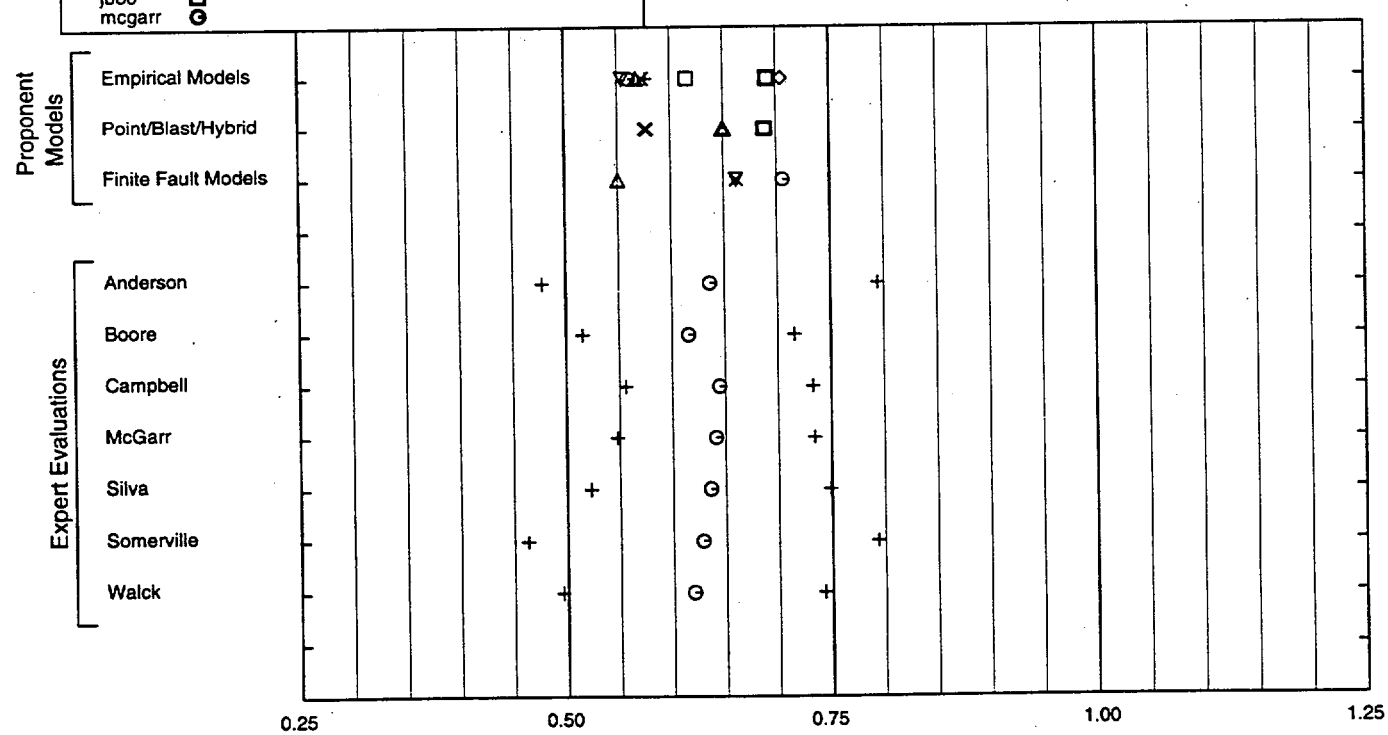
case 40, M= 6.5, shallow, xd=100 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

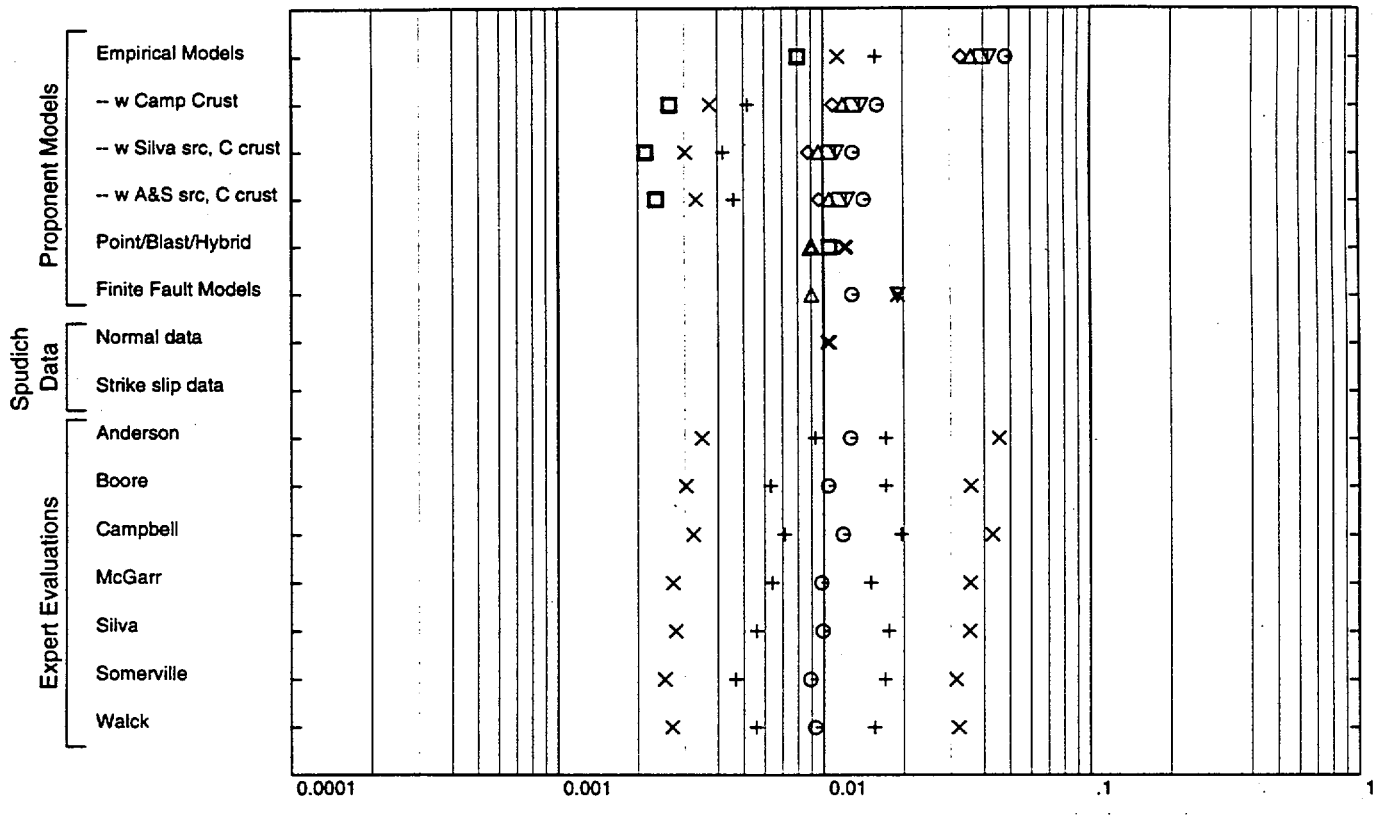
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

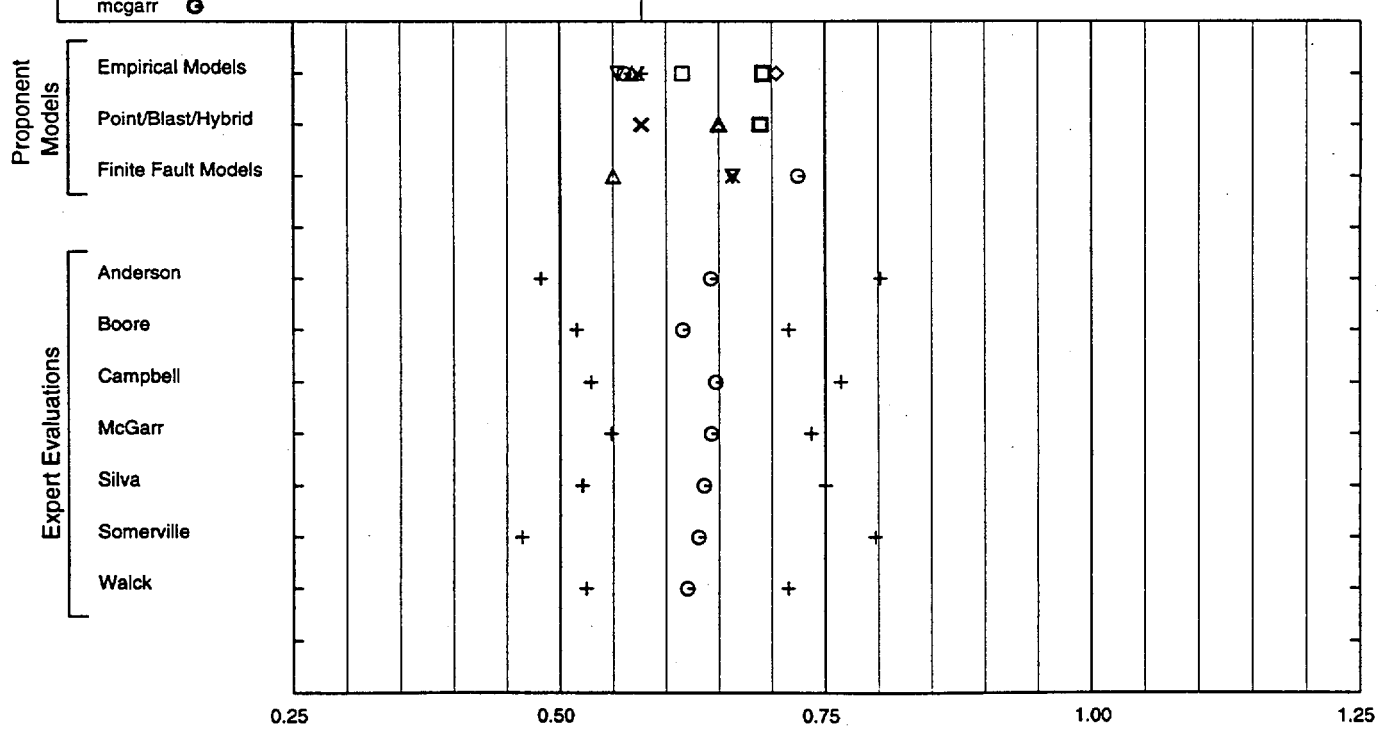
case 41, M= 6.5, shallow, xd=160 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

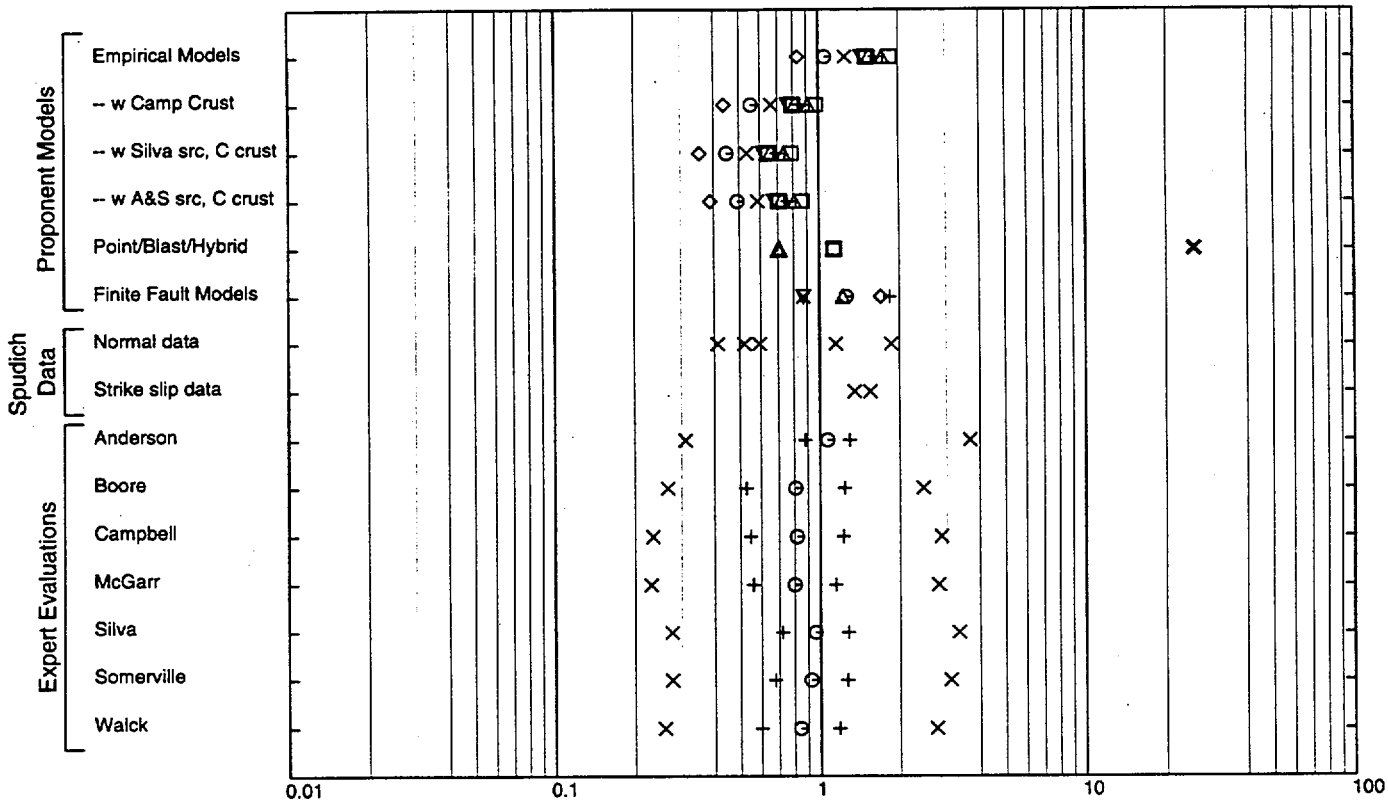
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

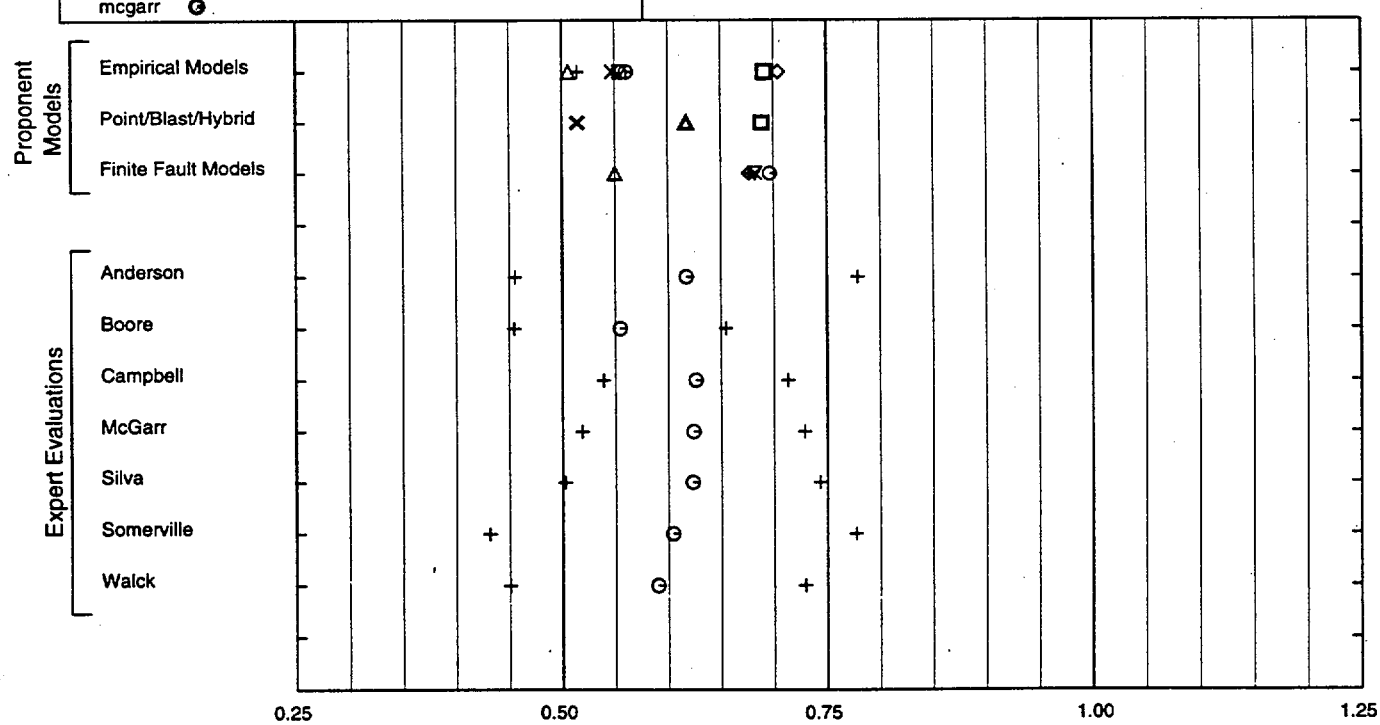
case 42, M= 7.0, shallow, xd= 1 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

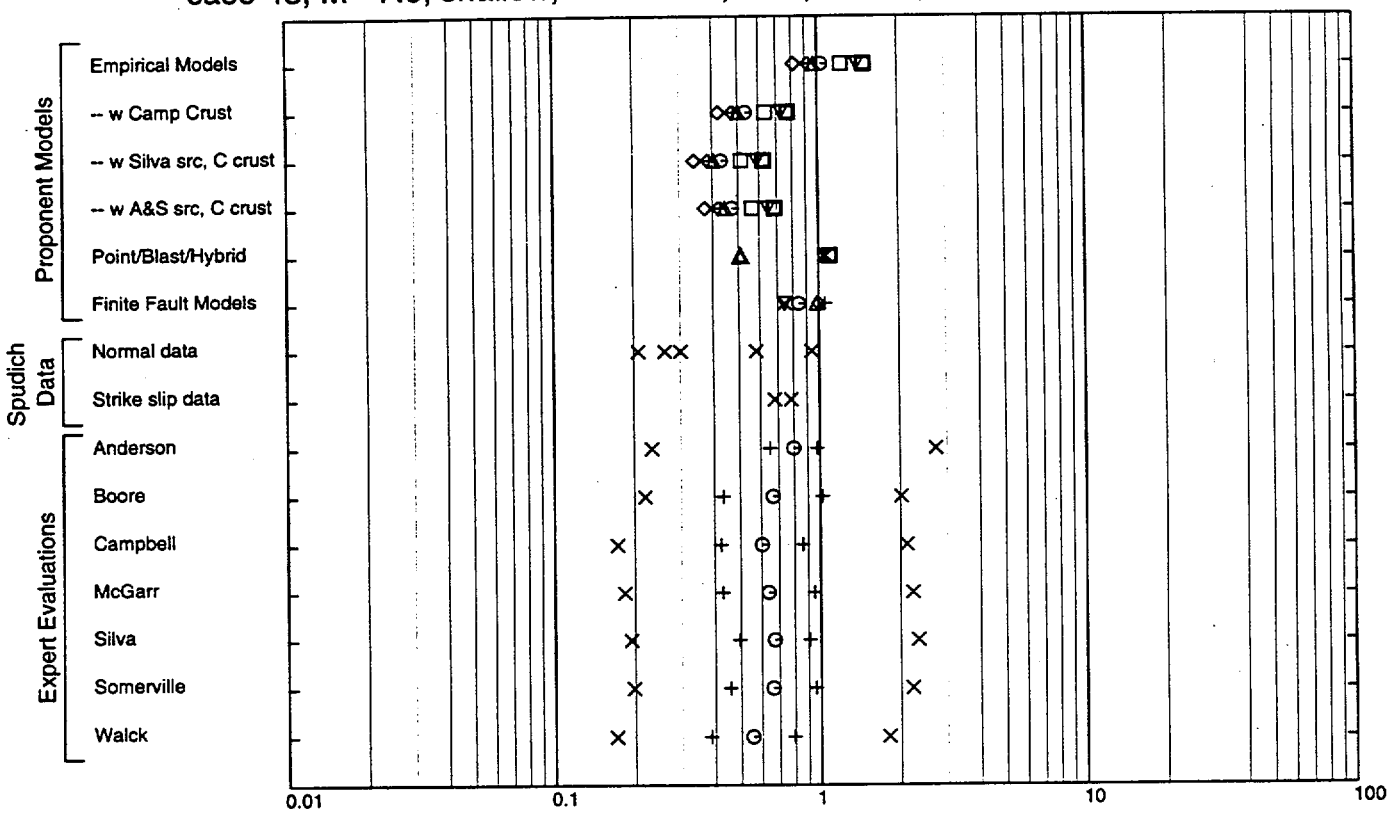
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



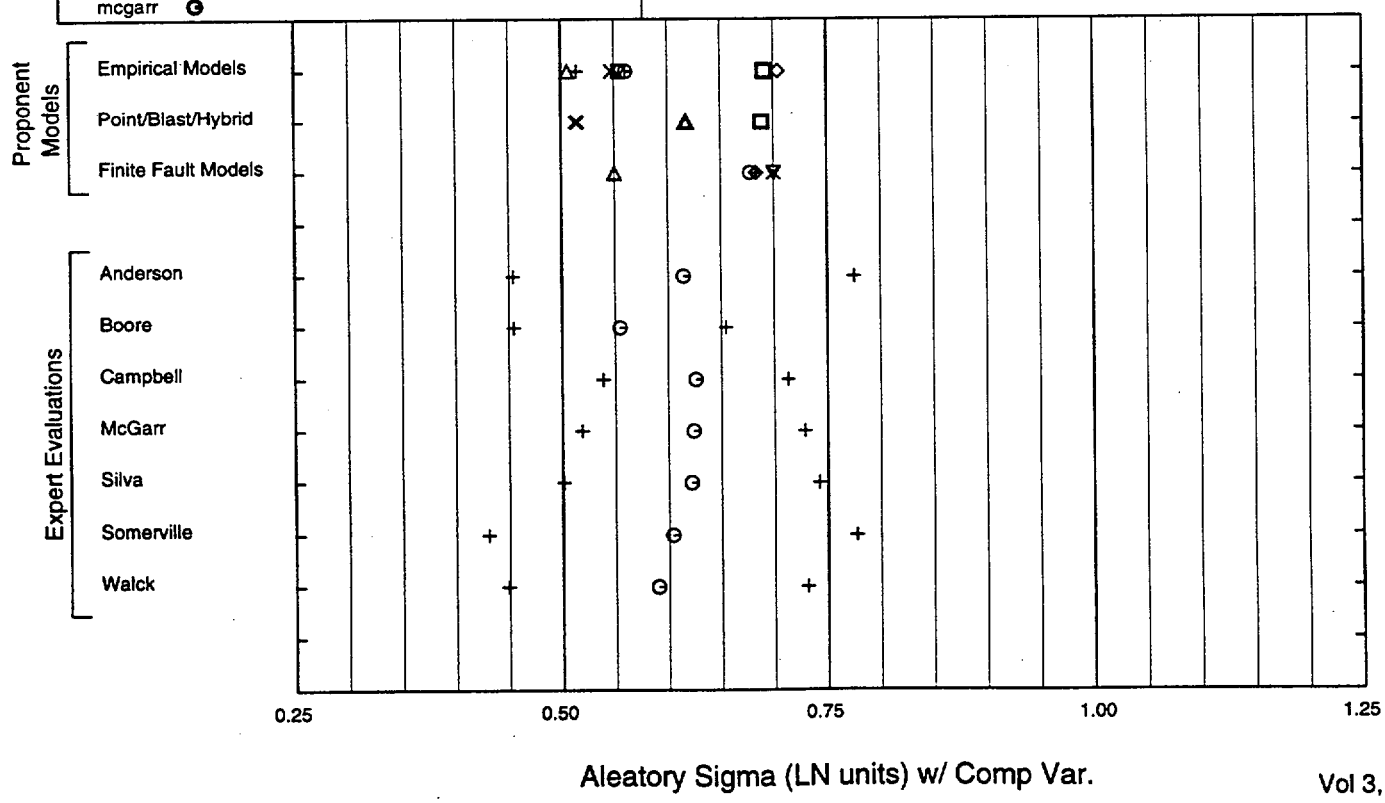
Aleatory Sigma (LN units) w/ Comp Var.

case 43, M= 7.0, shallow, xd= 10 km, HW, 5 Hz, HOR, 6/5/97, Rev 1

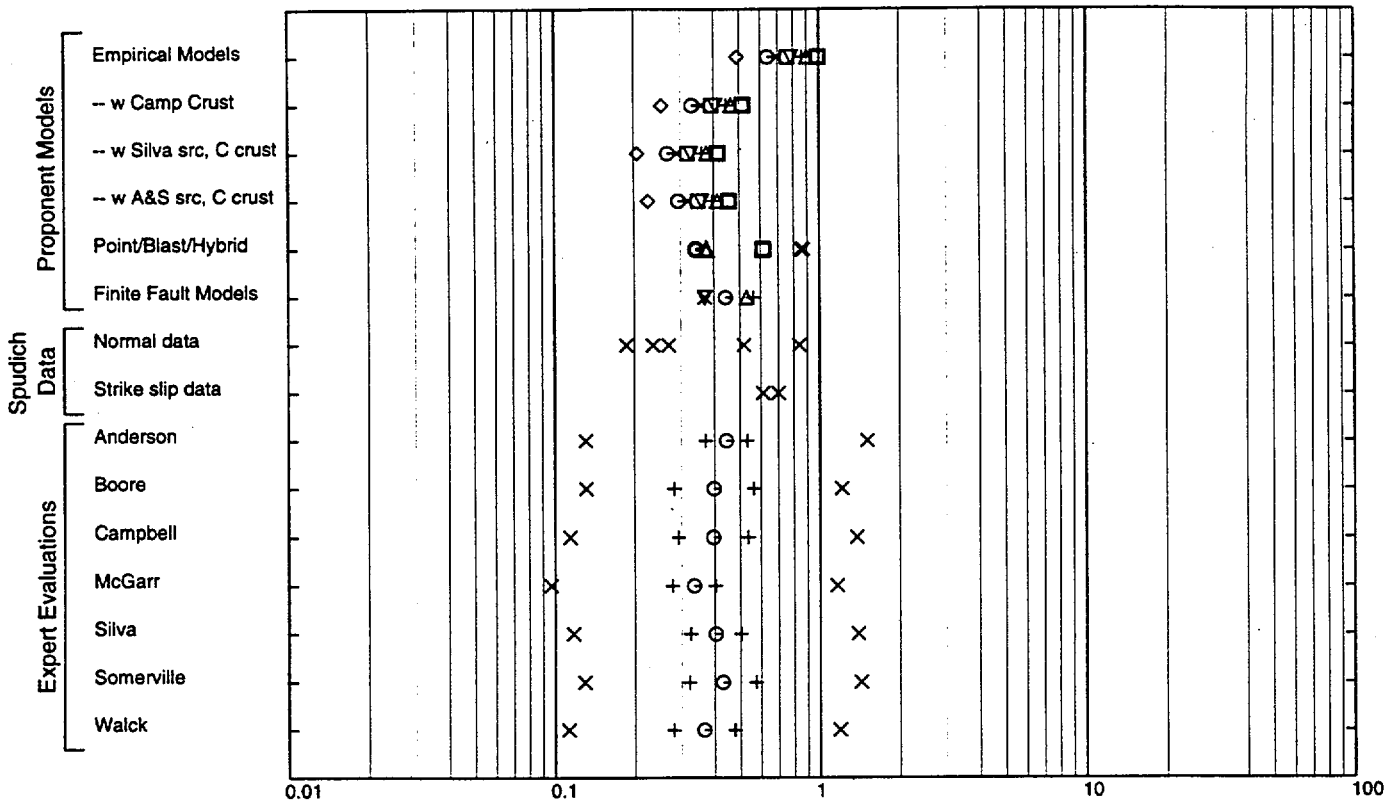


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



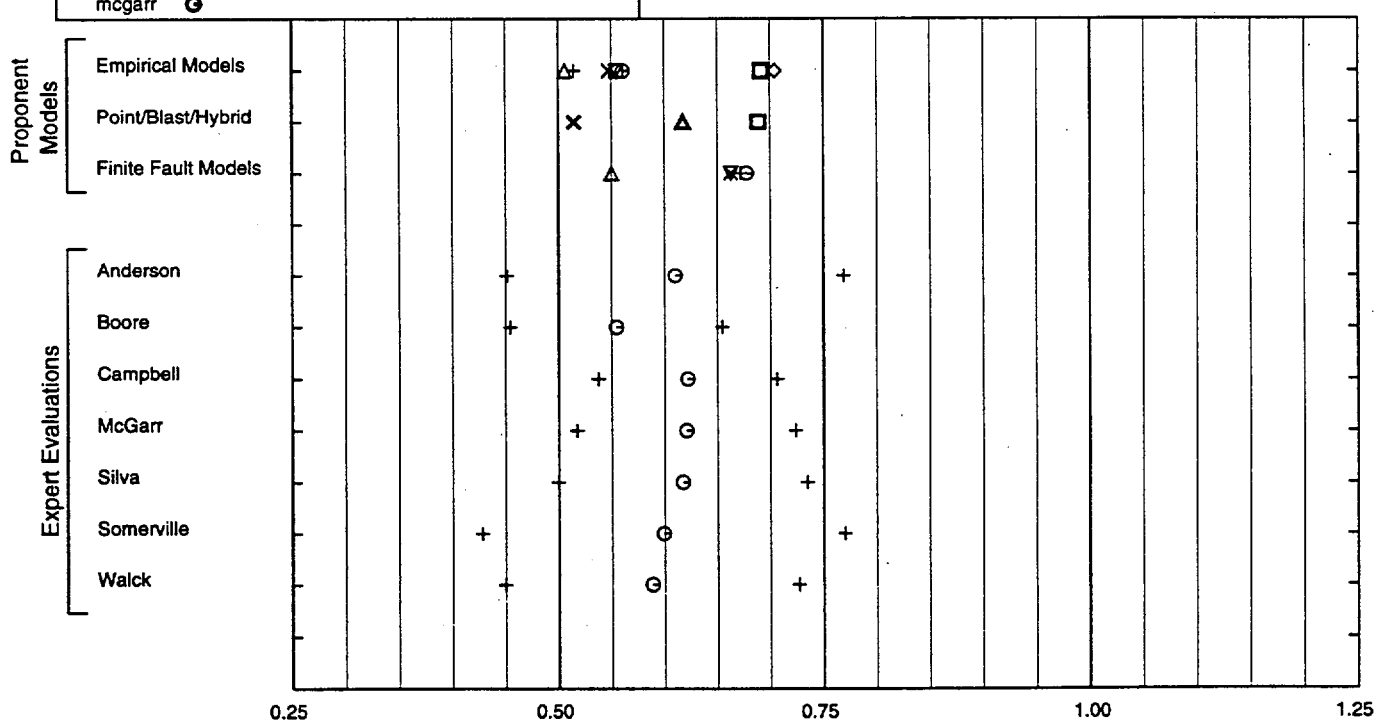
case 44, M= 7.0, shallow, xd=-10 km, FW, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

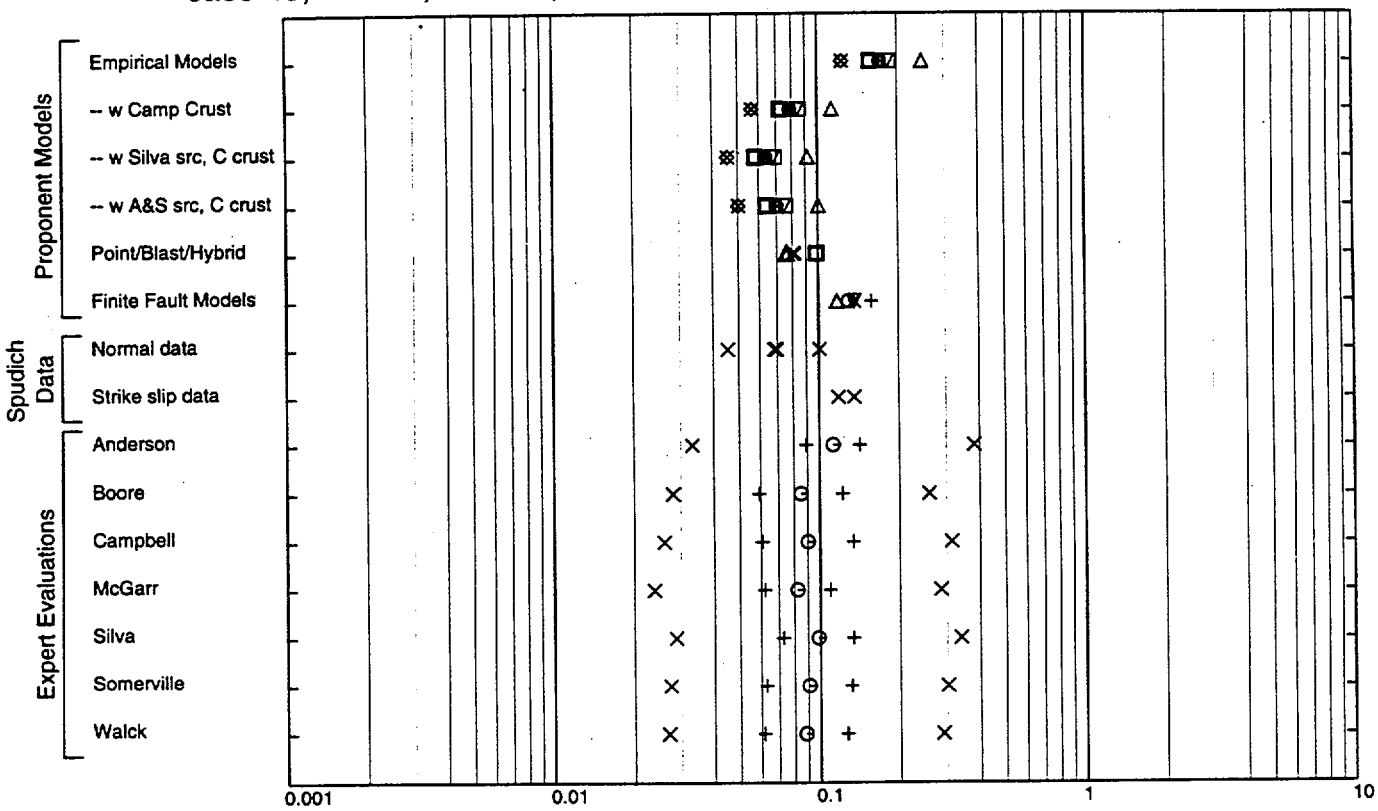
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

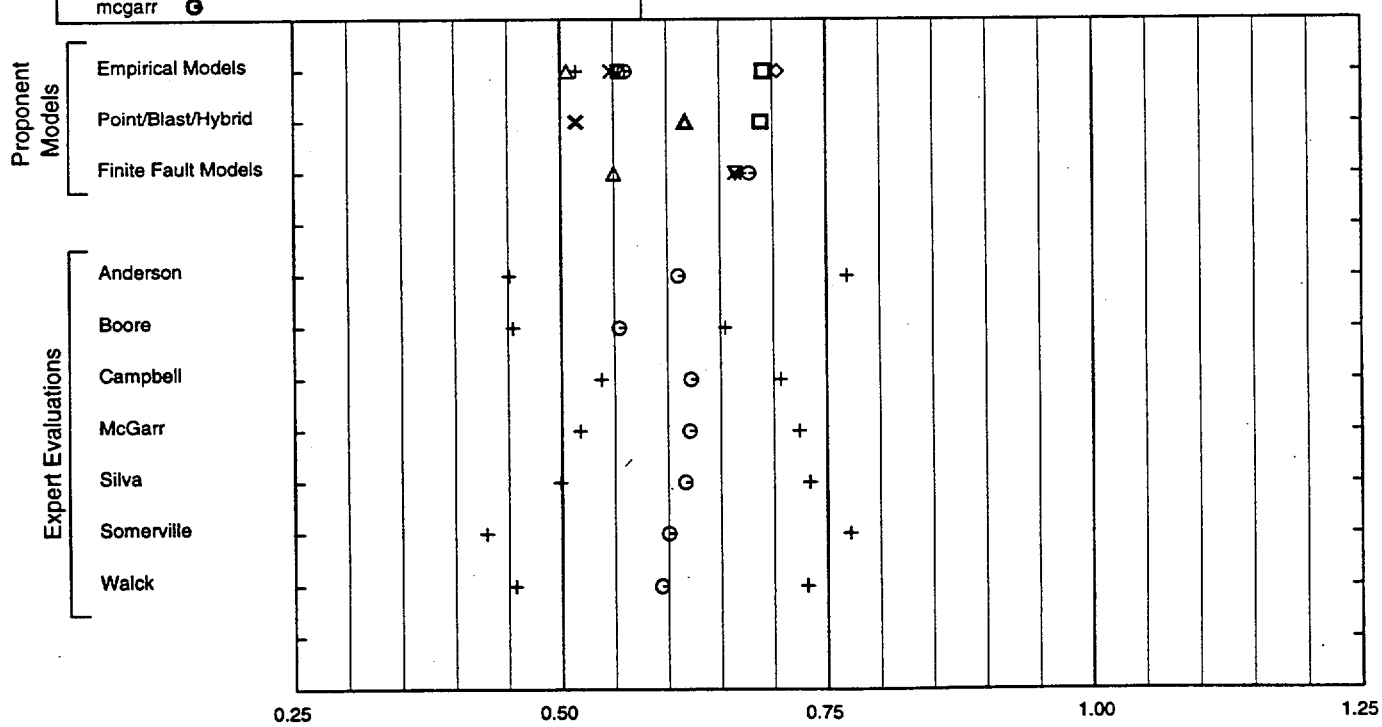
case 45, M= 7.0, shallow, xd= 50 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

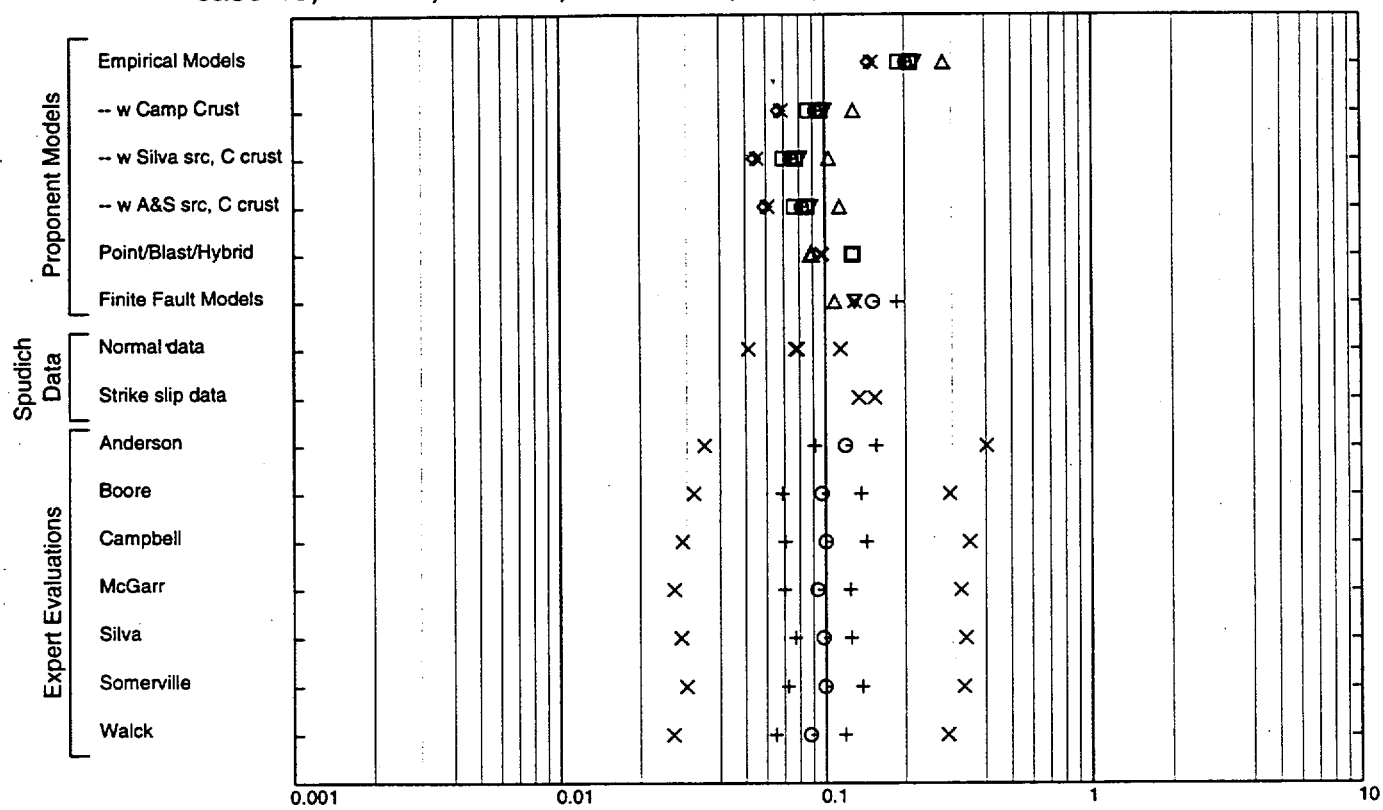
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



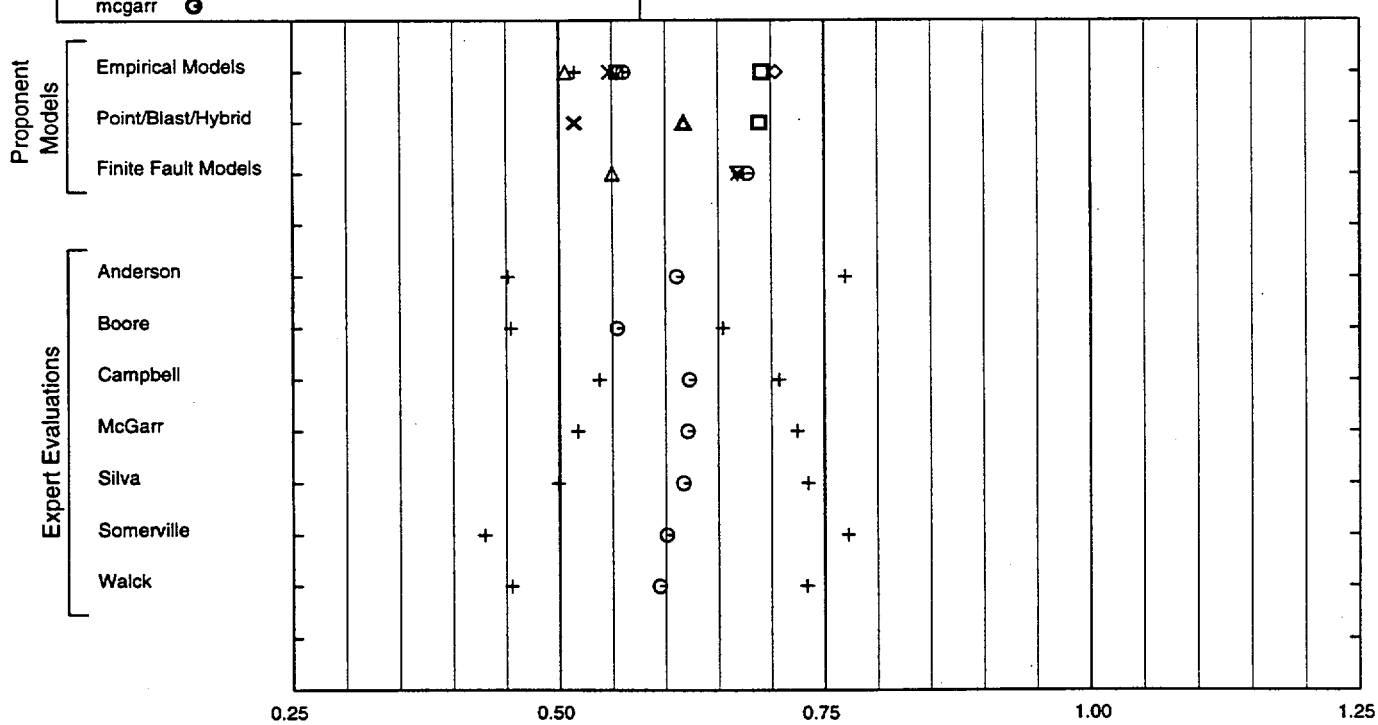
Aleatory Sigma (LN units) w/ Comp Var.

case 46, M= 7.0, shallow, xd= 50 km, HW, 5 Hz, HOR, 6/5/97, Rev 1

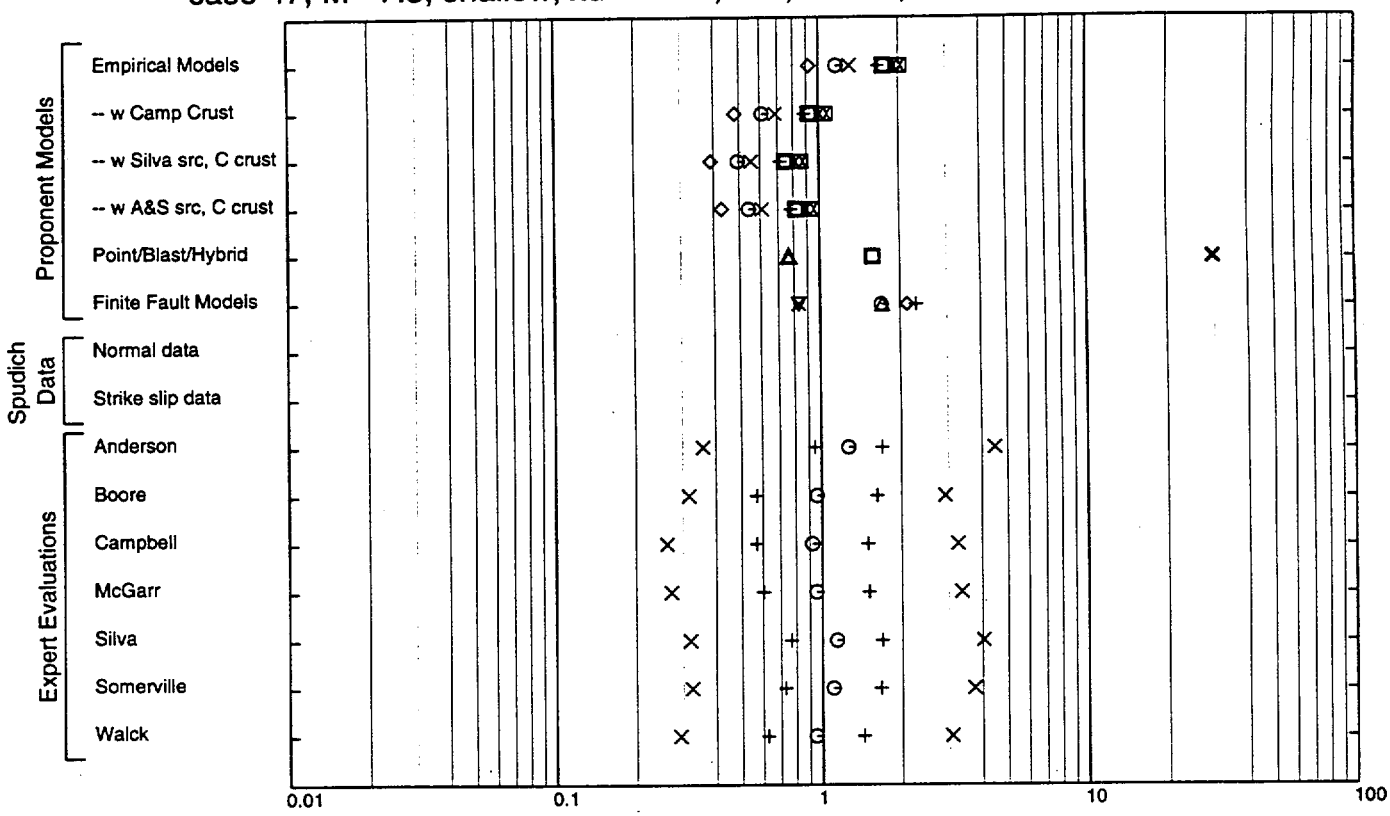


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



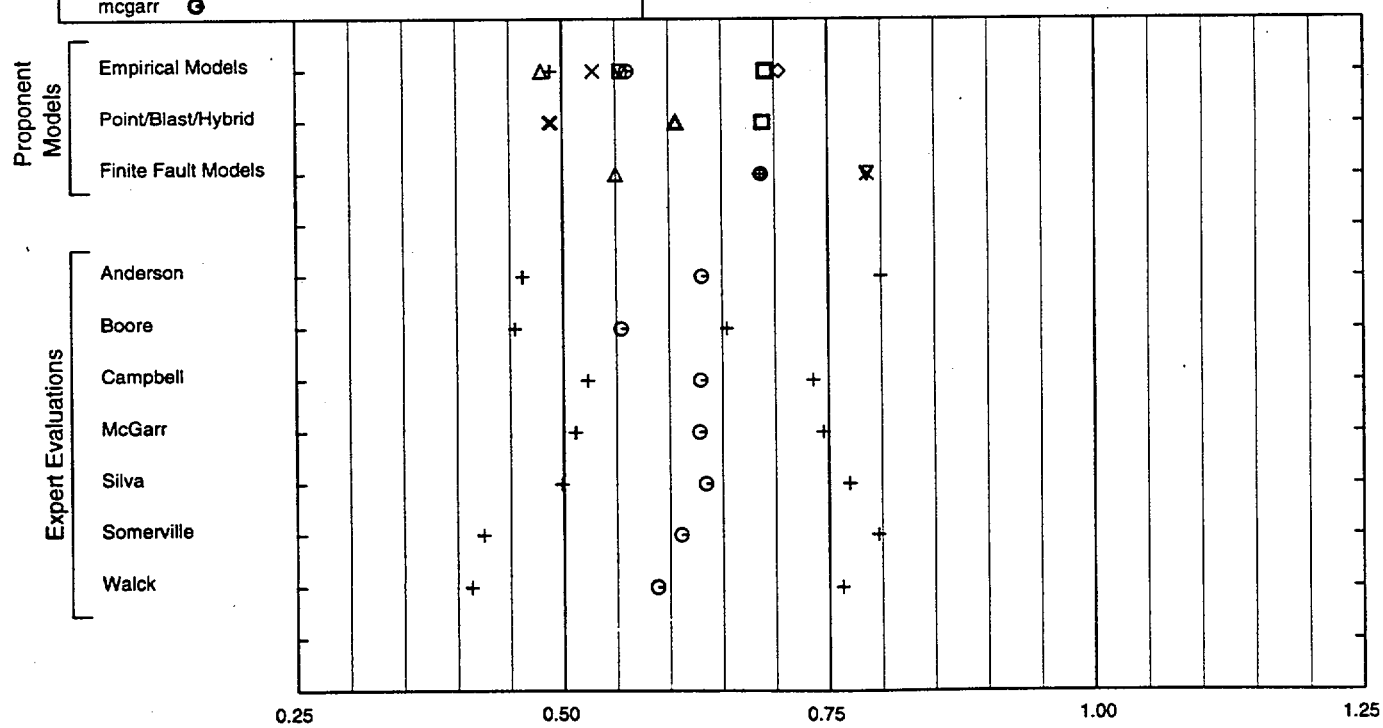
case 47, M= 7.5, shallow, xd= 1 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



LEGEND

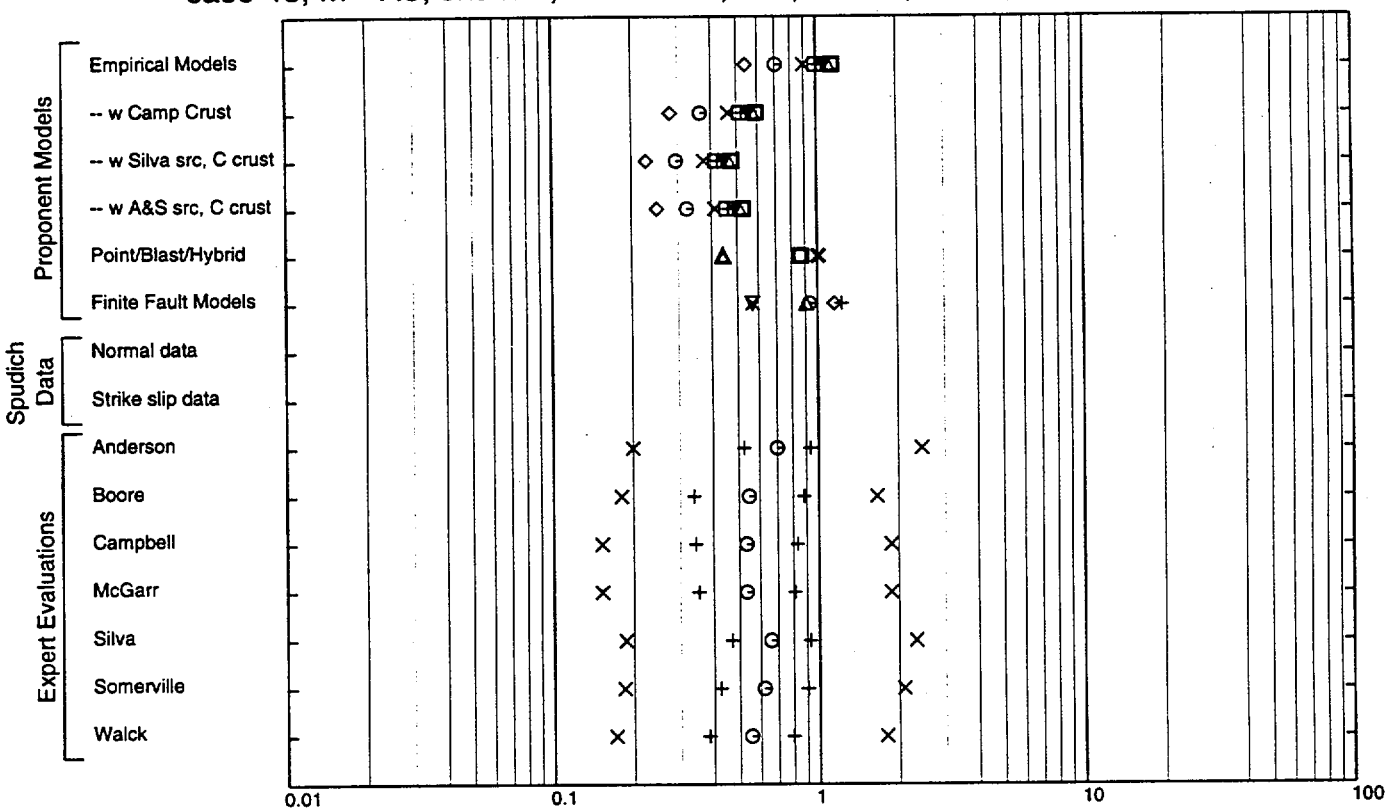
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

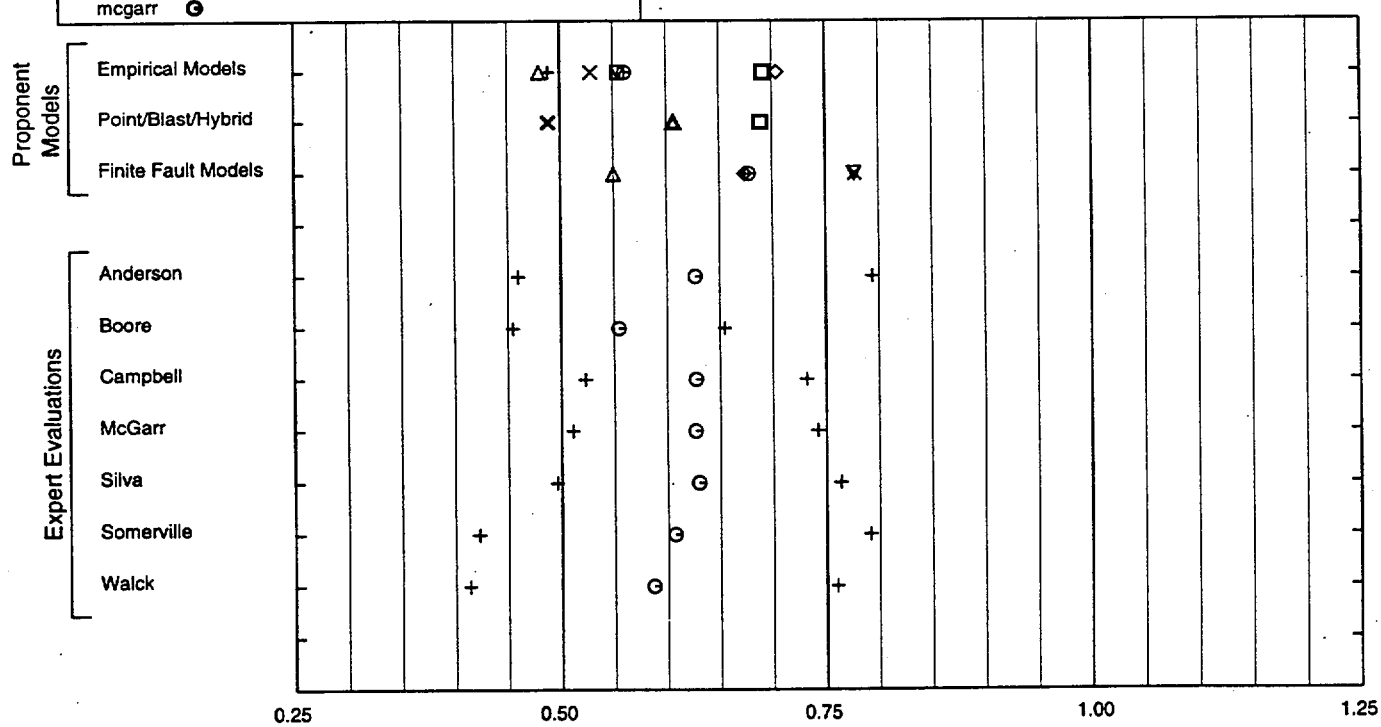
case 48, M= 7.5, shallow, xd= 10 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



LEGEND

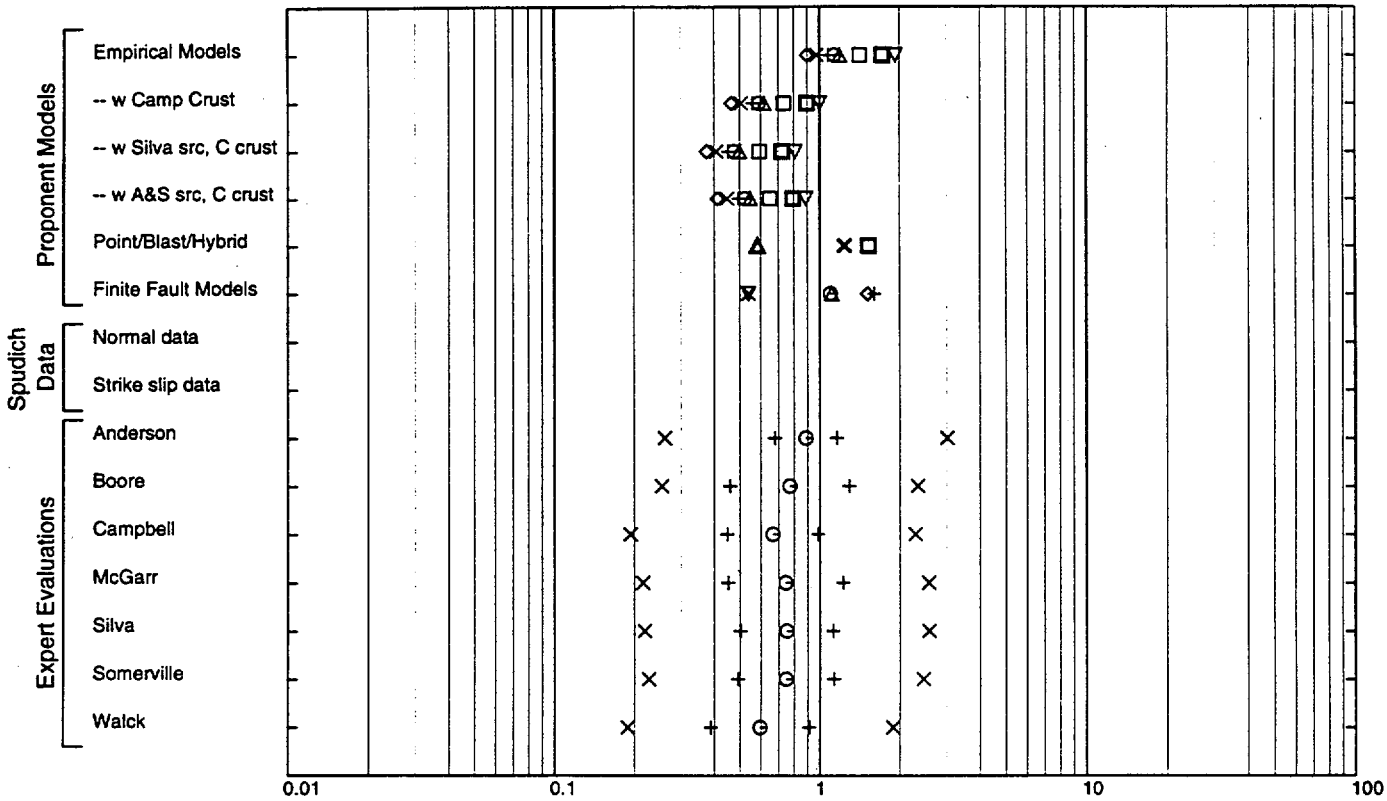
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

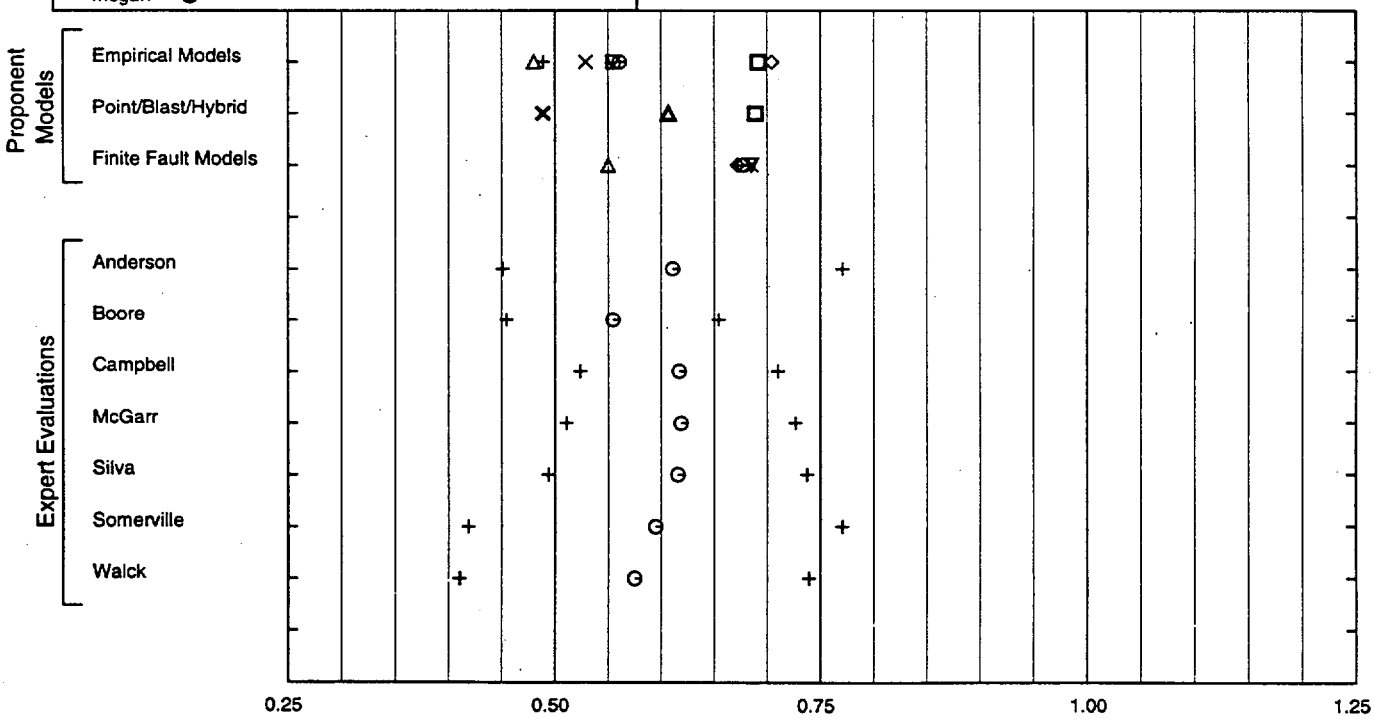
case 49, M= 7.5, shallow, xd= 10 km, HW, 5 Hz, HOR, 6/5/97, Rev 1



LEGEND

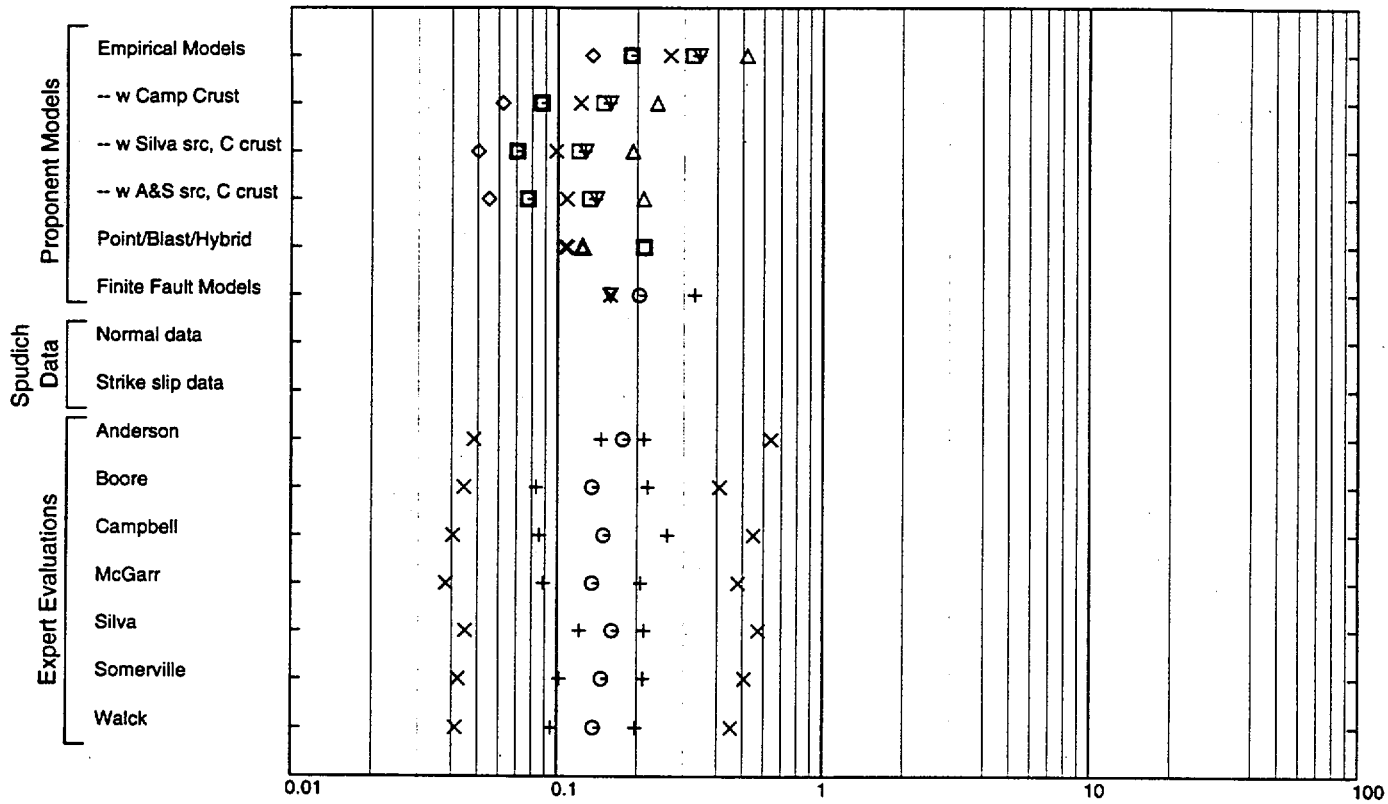
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

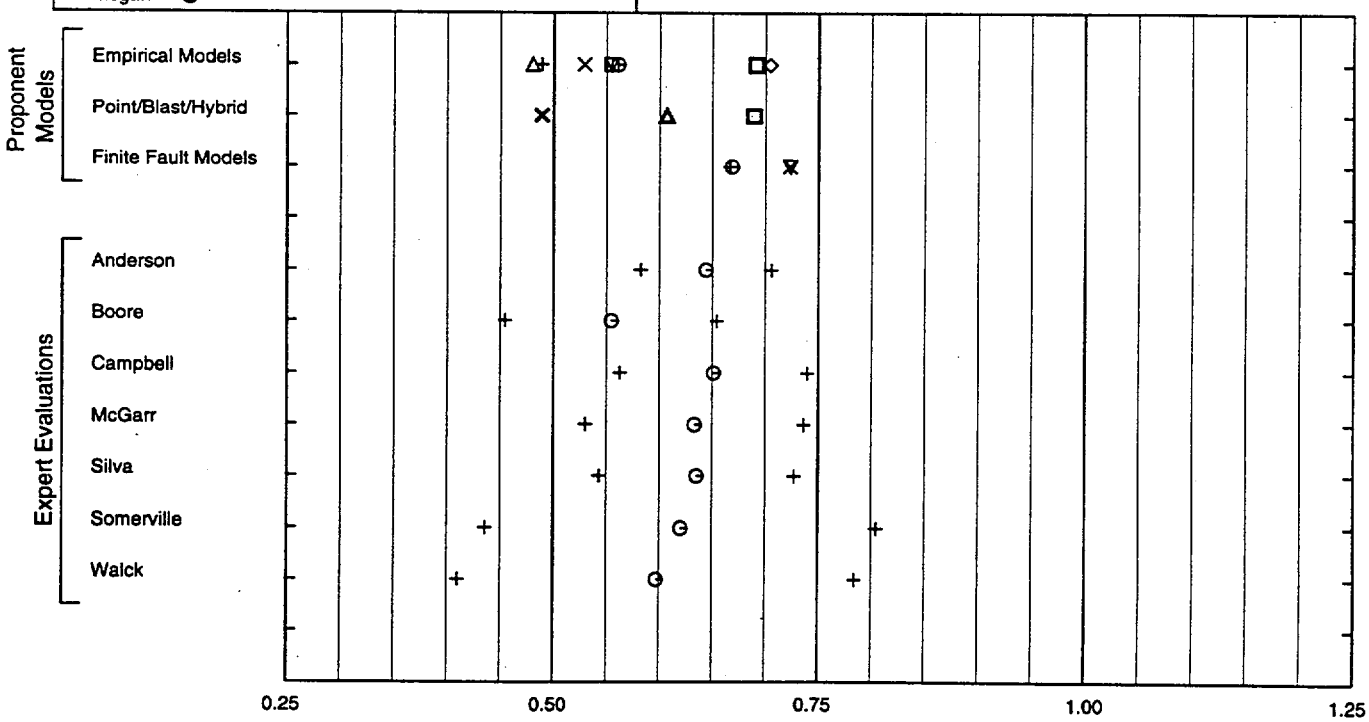
case 50, M= 8.0, shallow, xd= 50 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



LEGEND

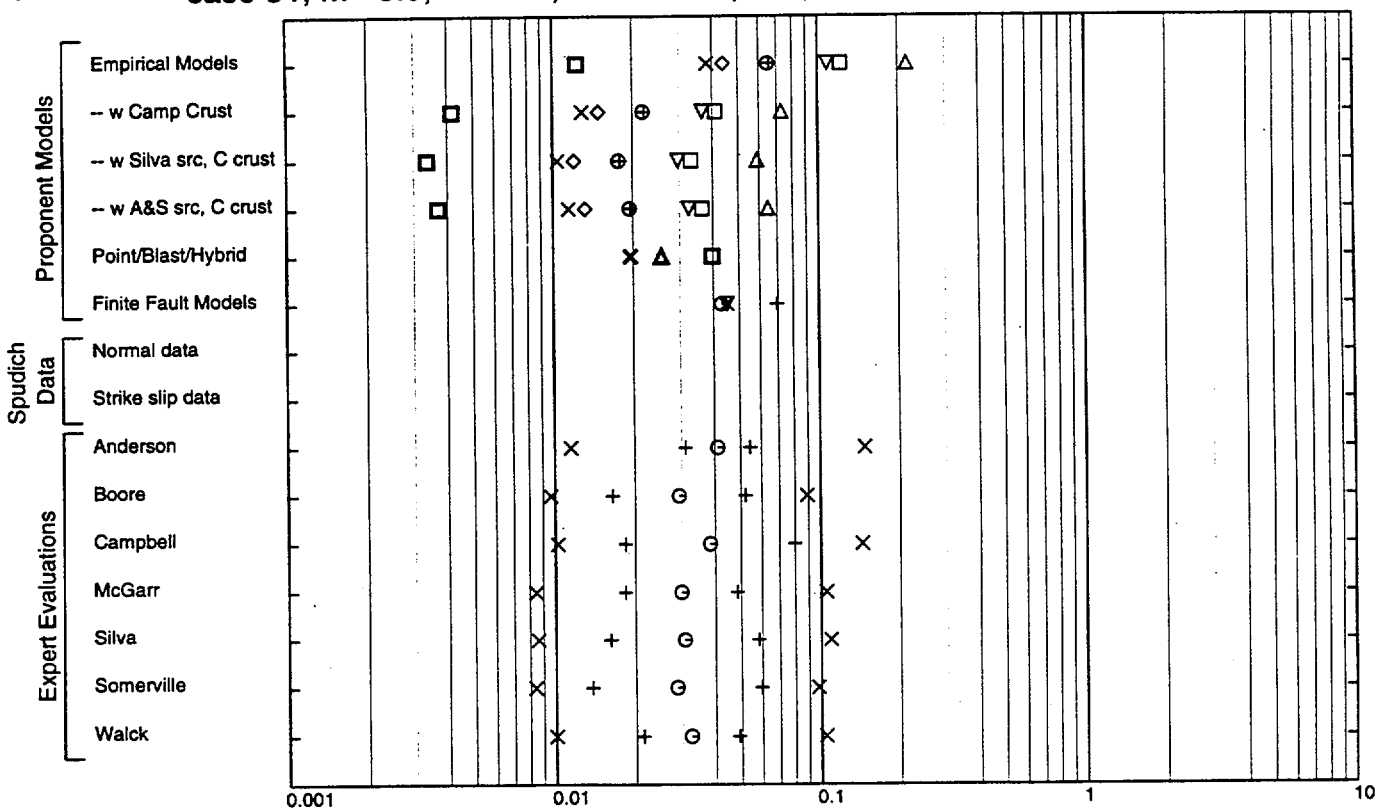
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

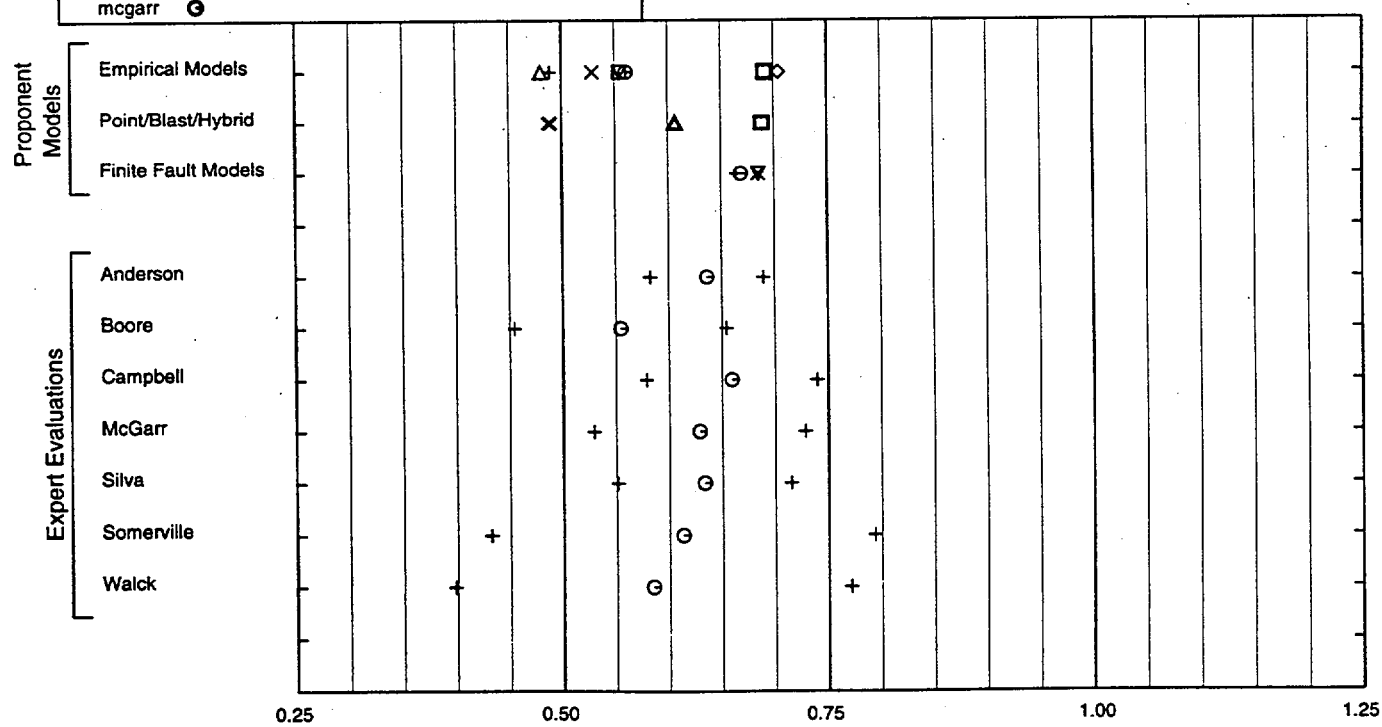
case 51, M= 8.0, shallow, xd=160 km, SS, 5 Hz, HOR, 6/5/97, Rev 1



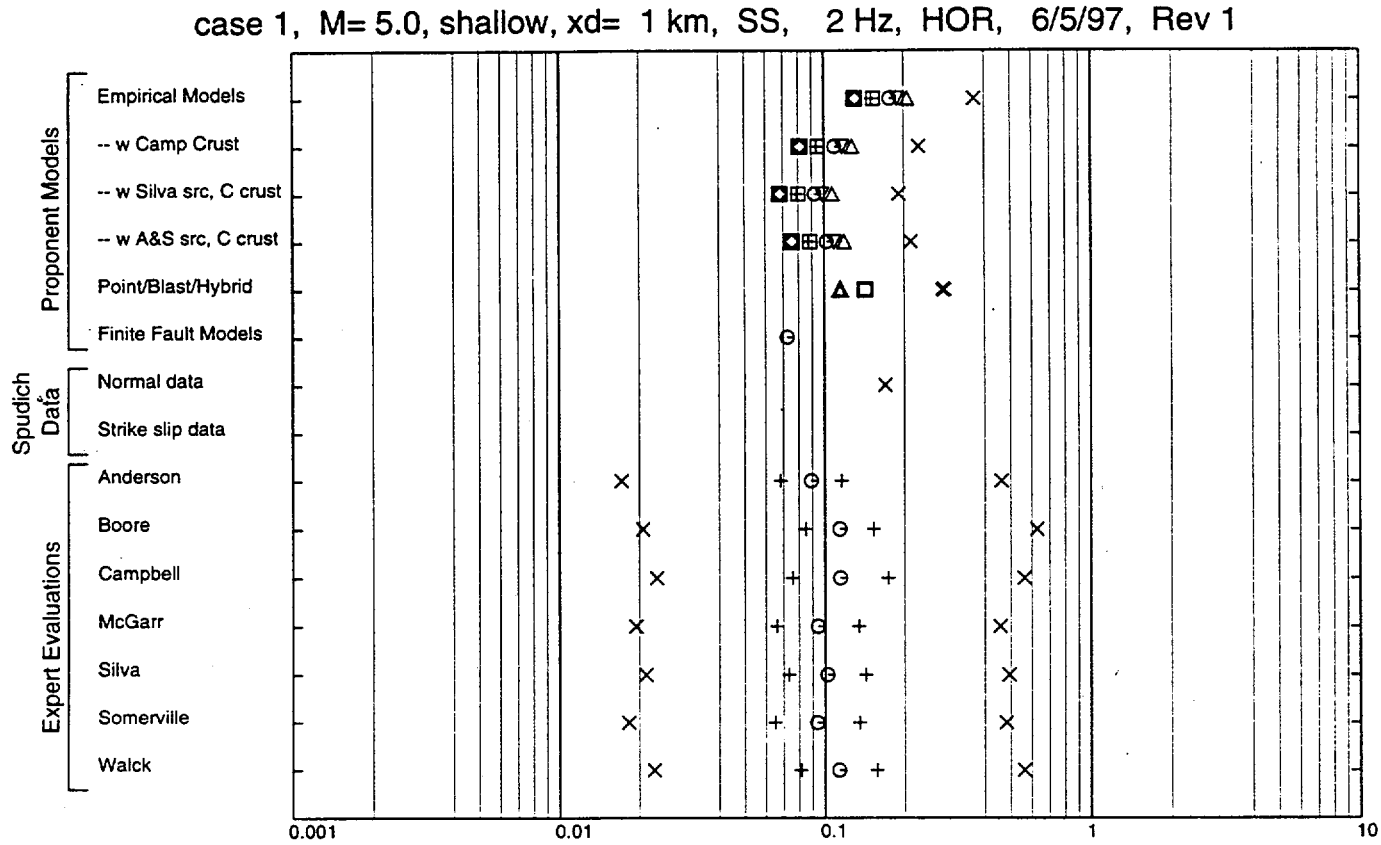
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

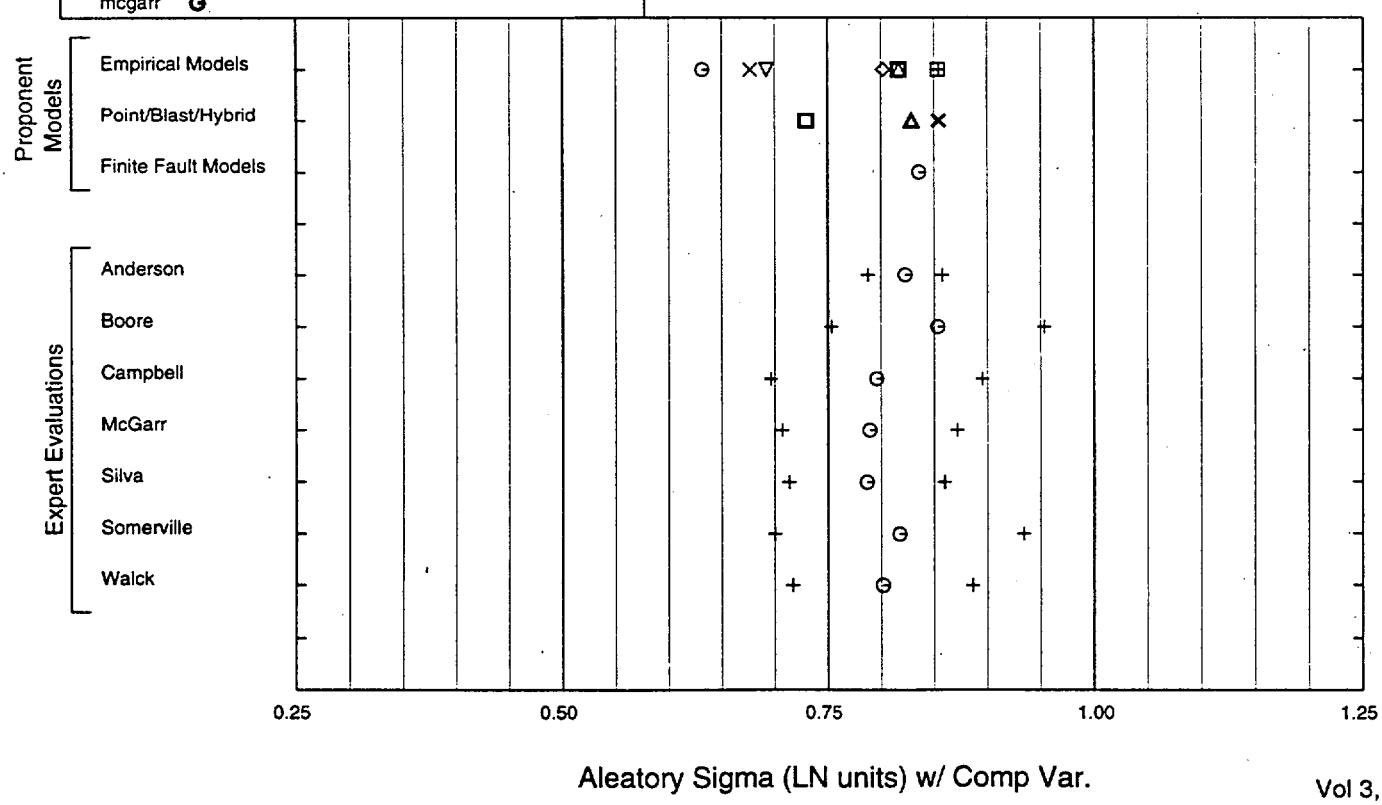


Aleatory Sigma (LN units) w/ Comp Var.

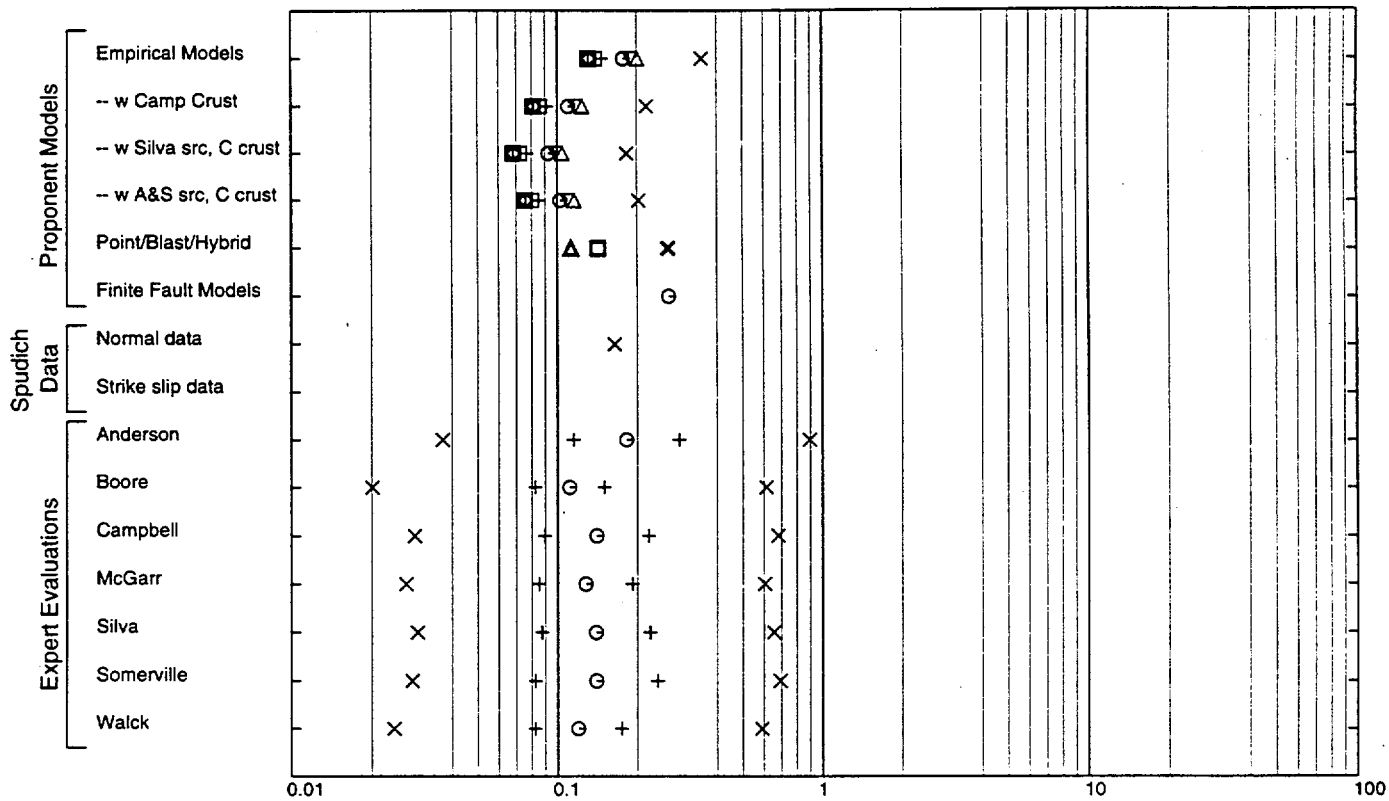


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



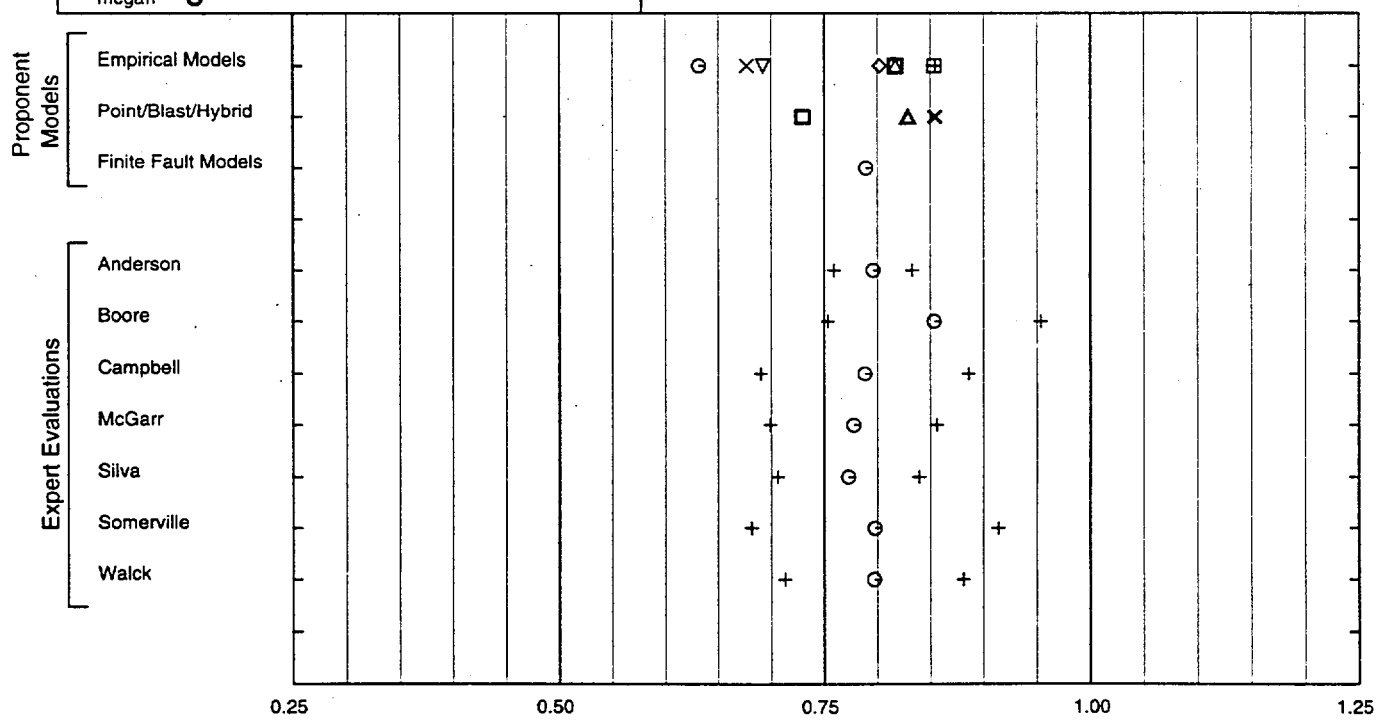
case 2, M= 5.0, shallow, xd= 1 km, HW, 2 Hz, HOR, 6/5/97, Rev 1



LEGEND

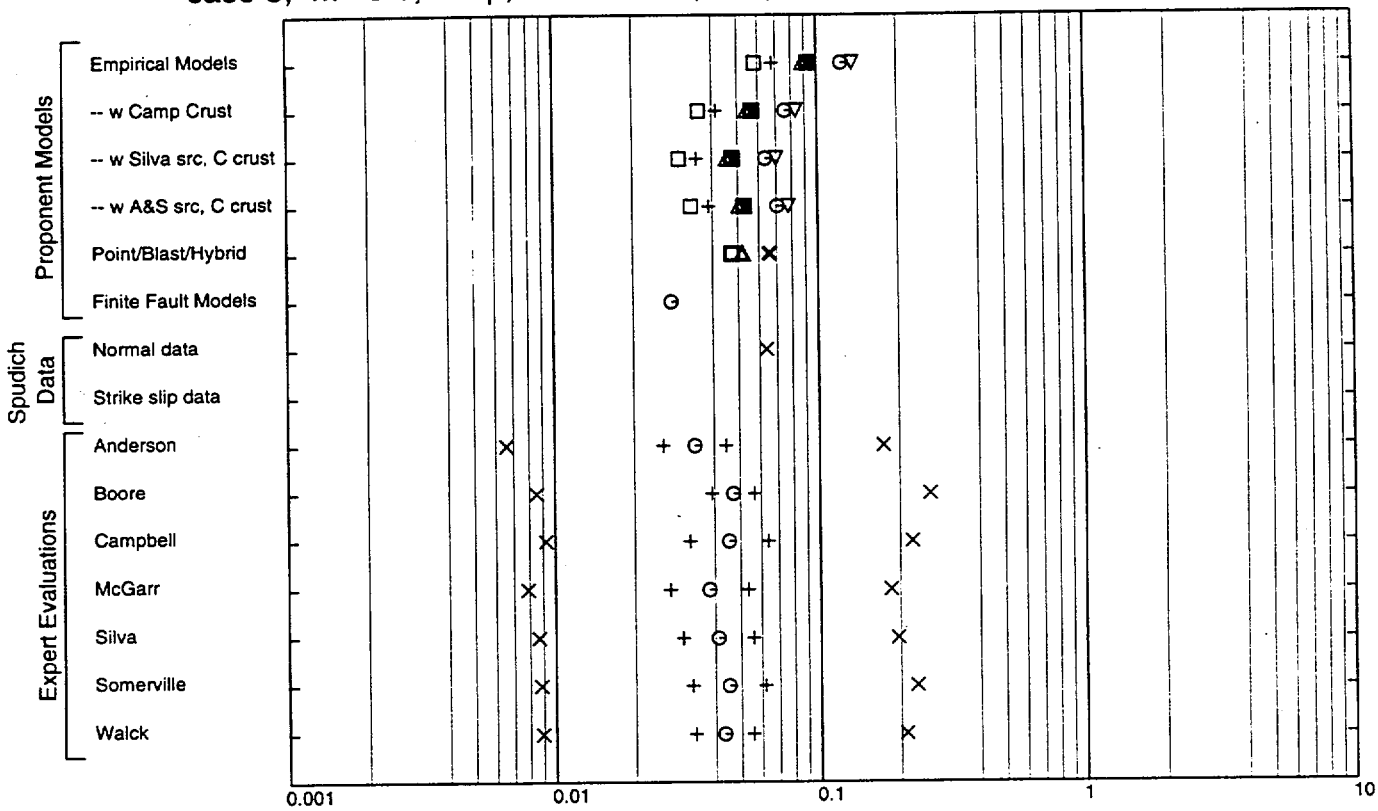
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

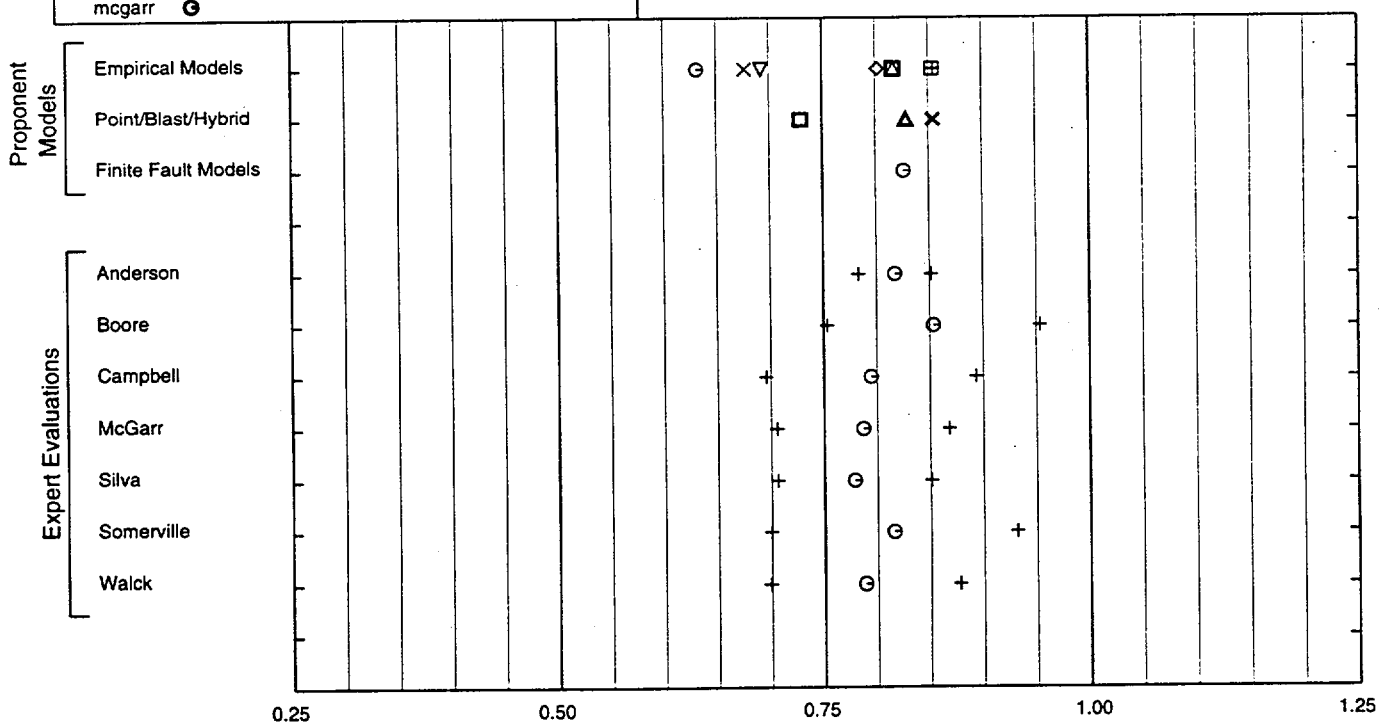
case 3, M= 5.0, deep, xd= 5 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



LEGEND

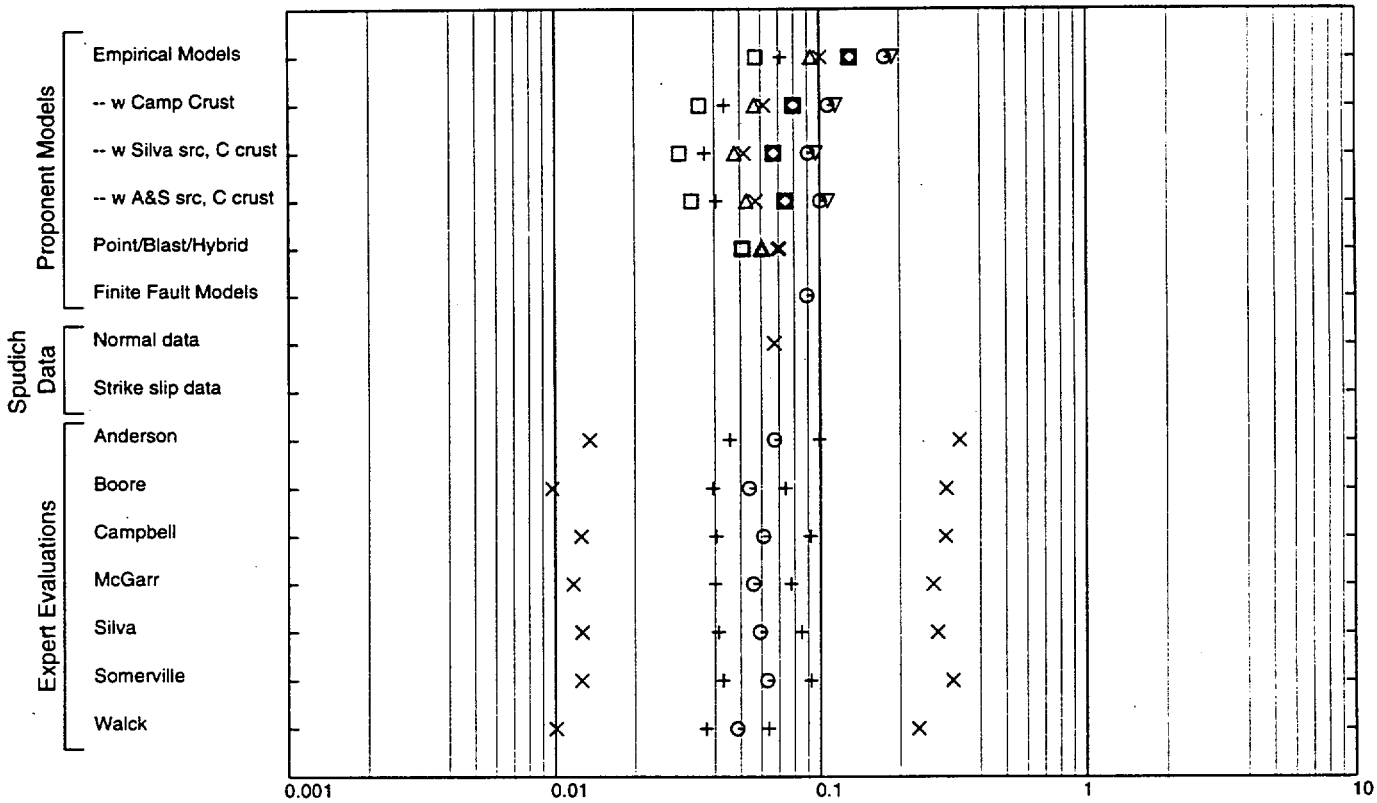
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

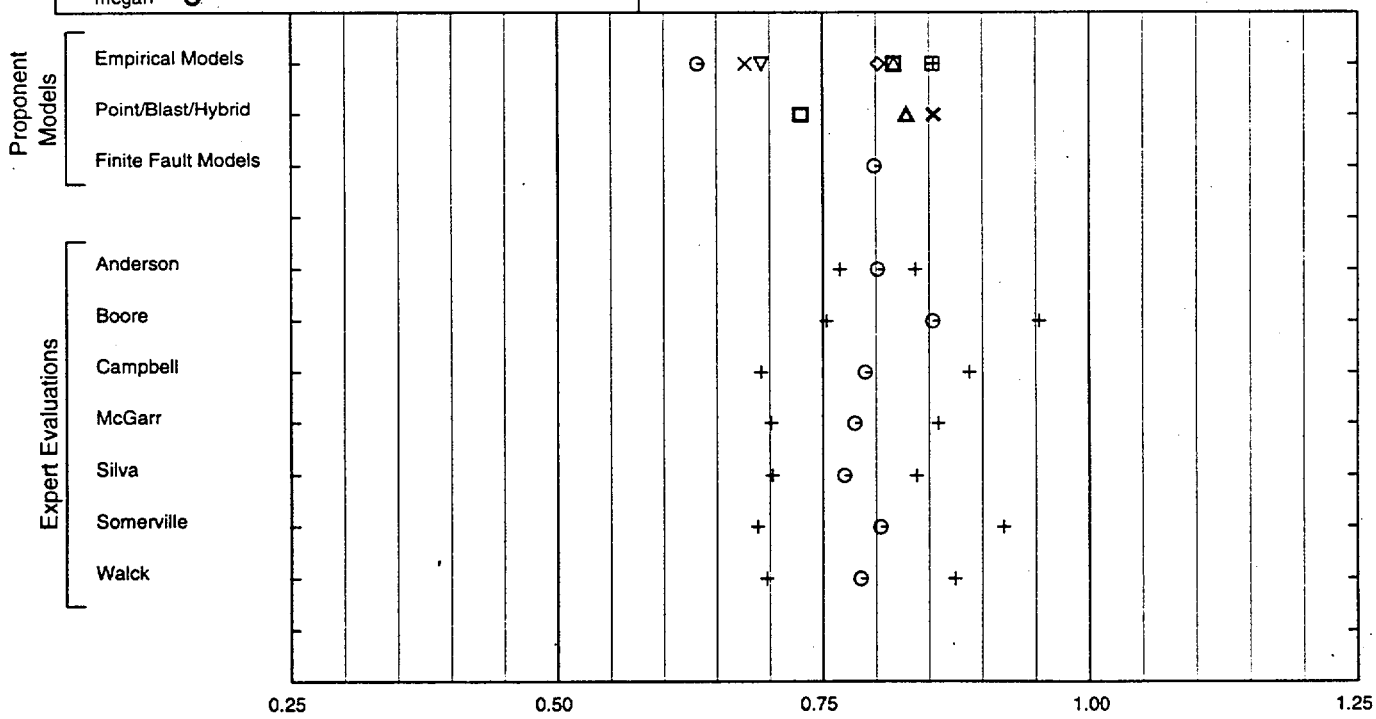
case 4, M= 5.0, deep, xd= 5 km, HW, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

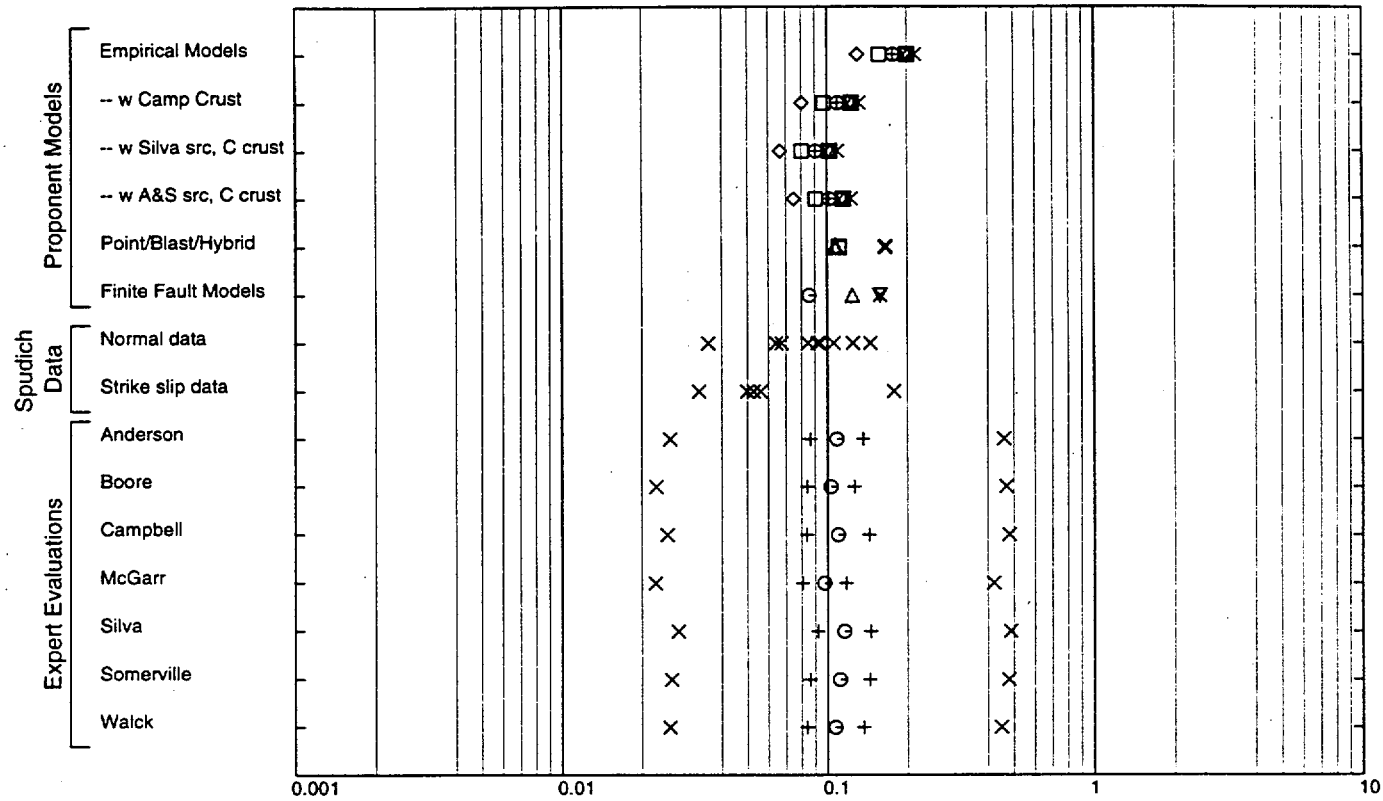
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

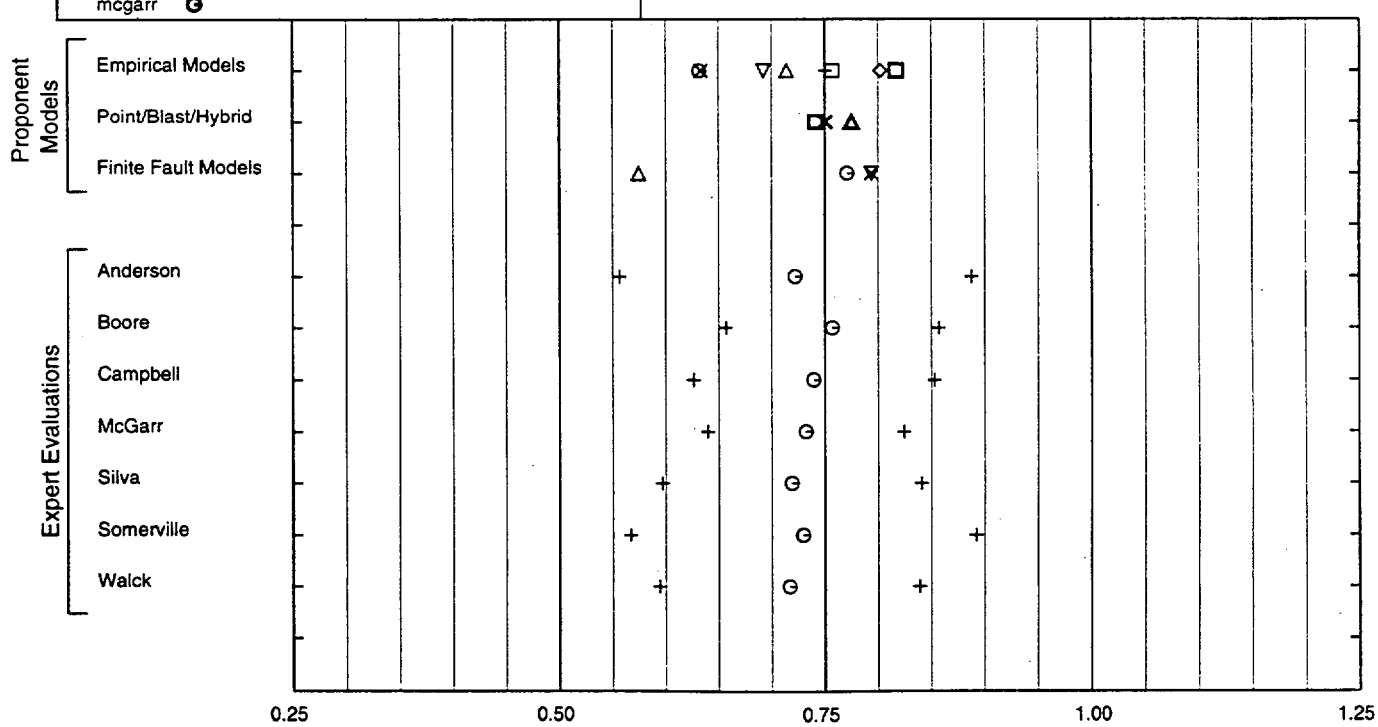
case 5, M= 5.8, deep, xd= 10 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

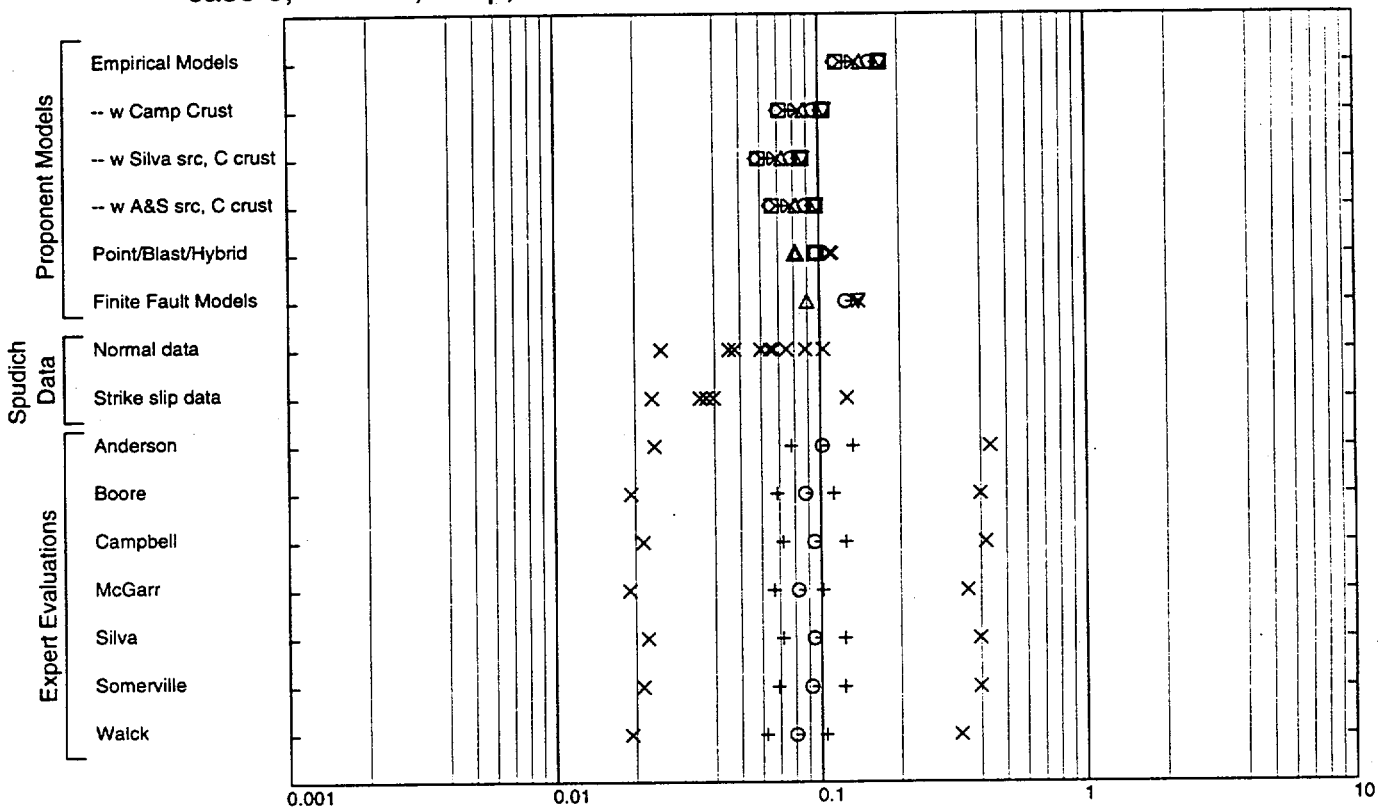
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

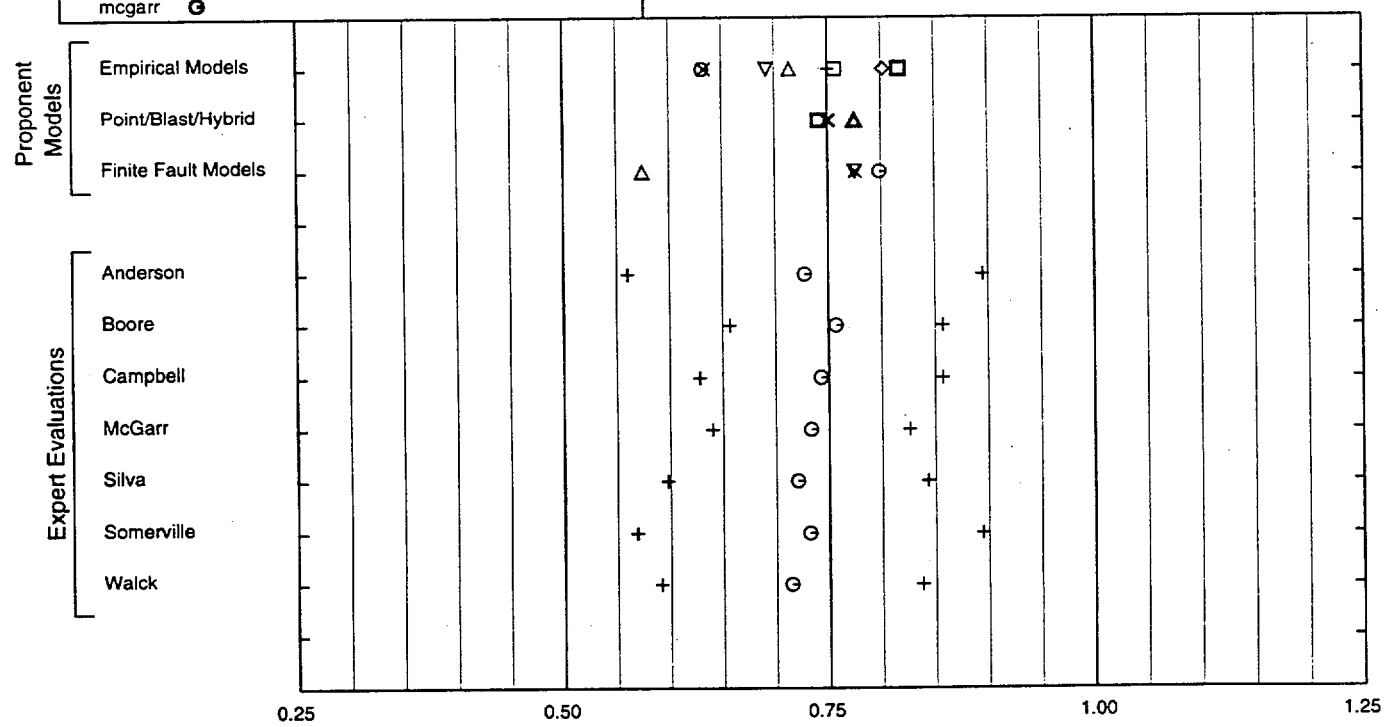
case 6, M= 5.8, deep, xd= 20 km, HW, 2 Hz, HOR, 6/5/97, Rev 1



LEGEND

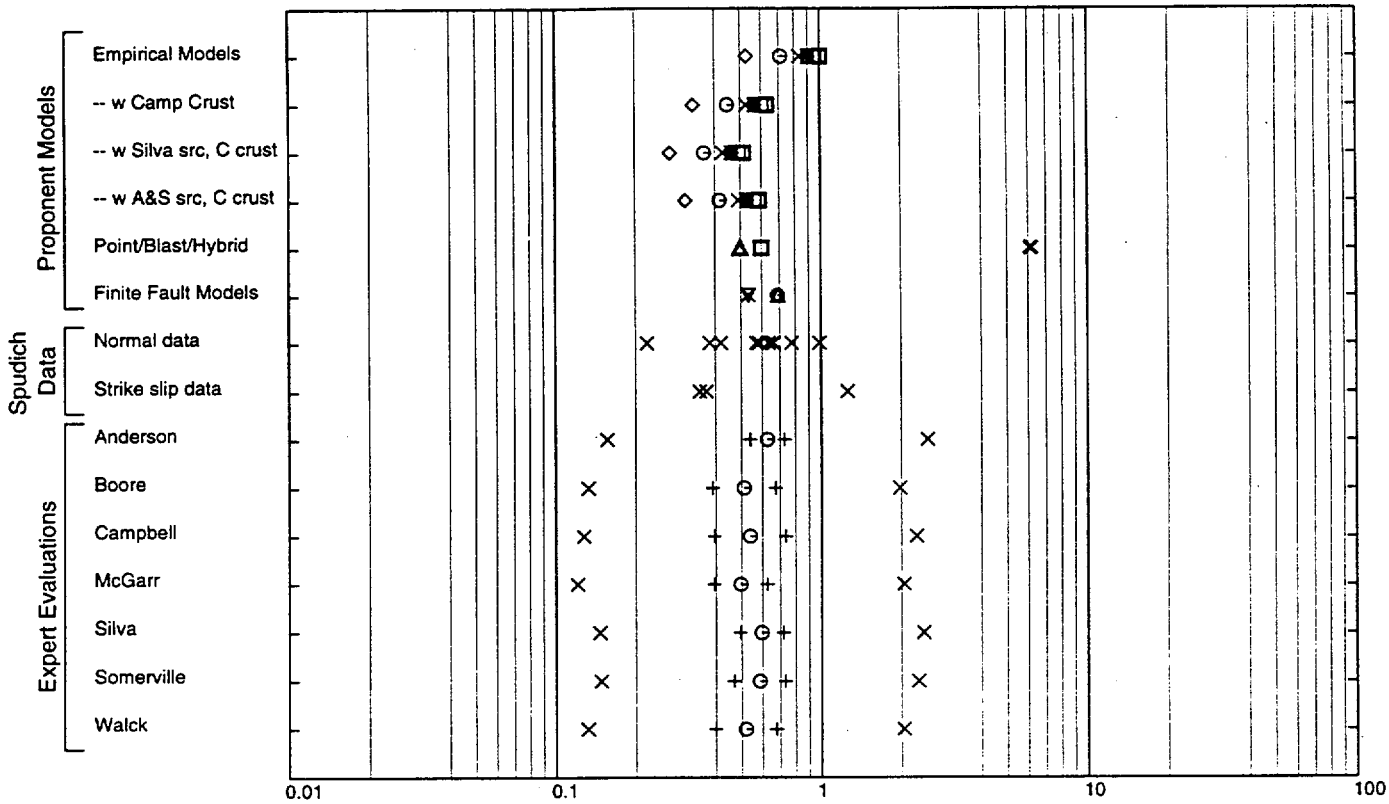
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

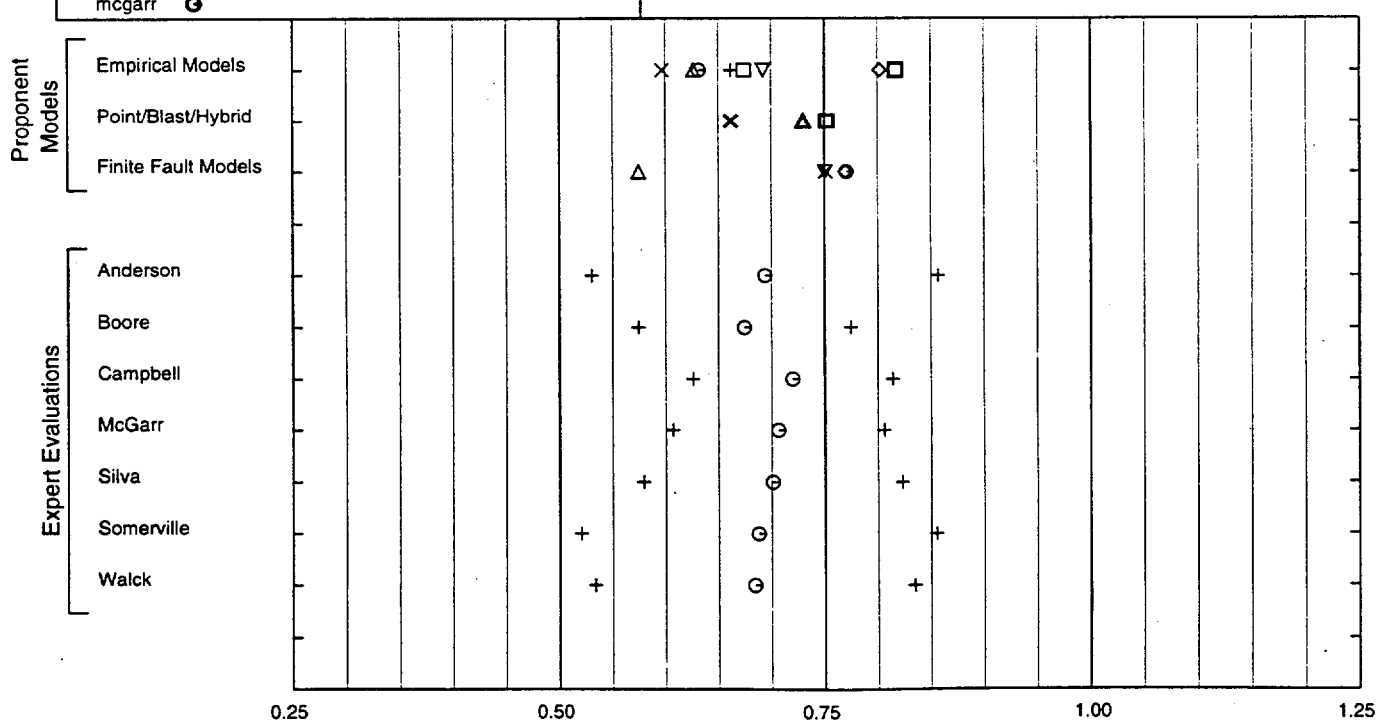
case 7, M= 6.5, shallow, xd= 1 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

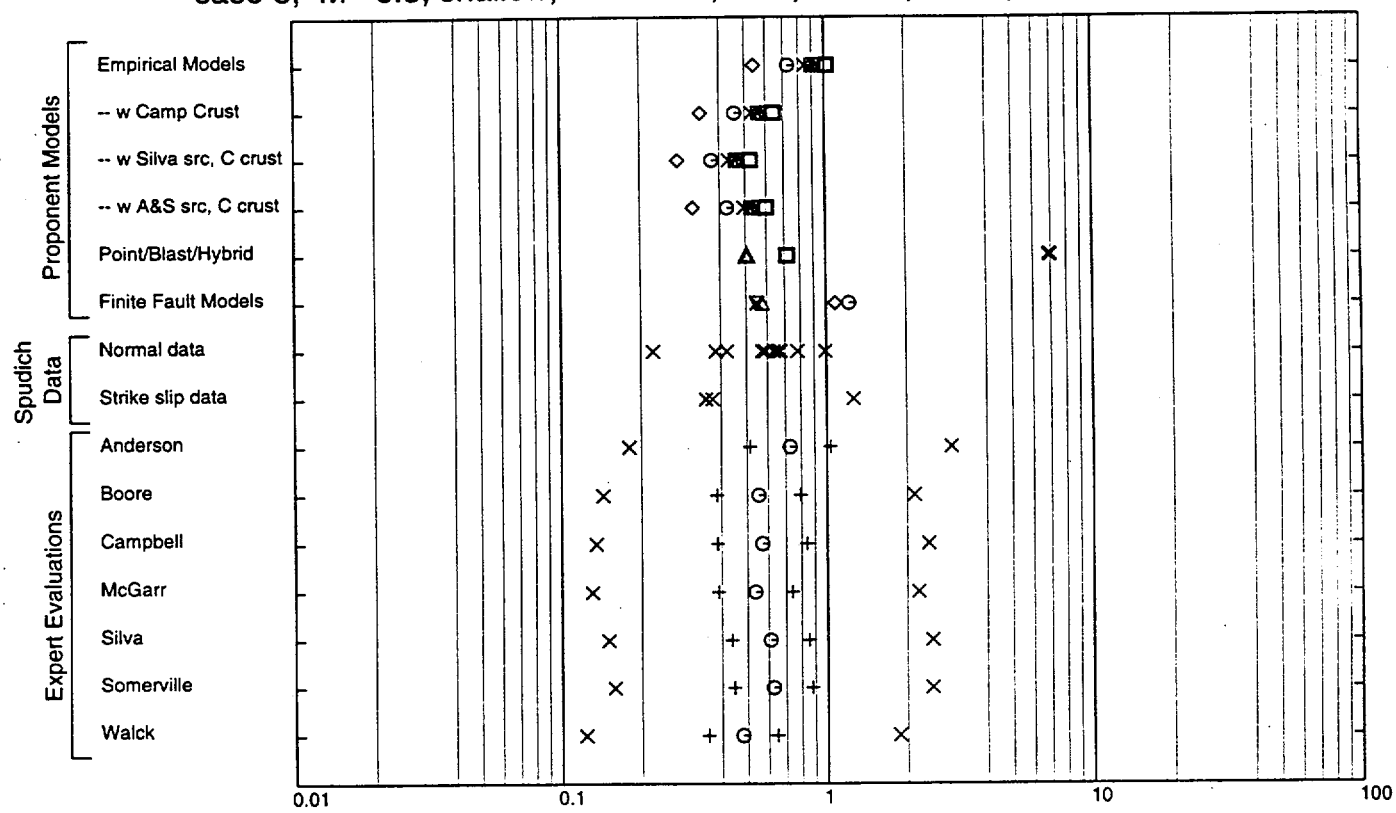
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

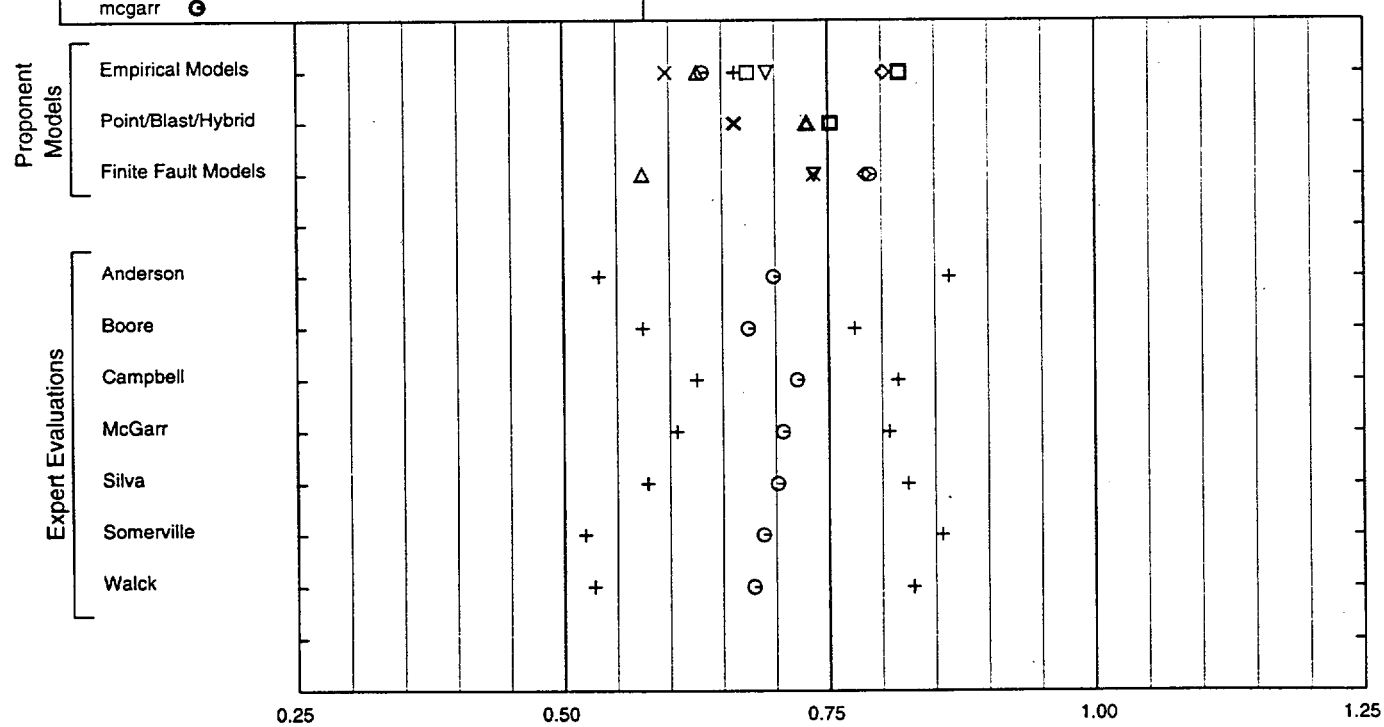
case 8, M= 6.5, shallow, xd= 1 km, HW, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

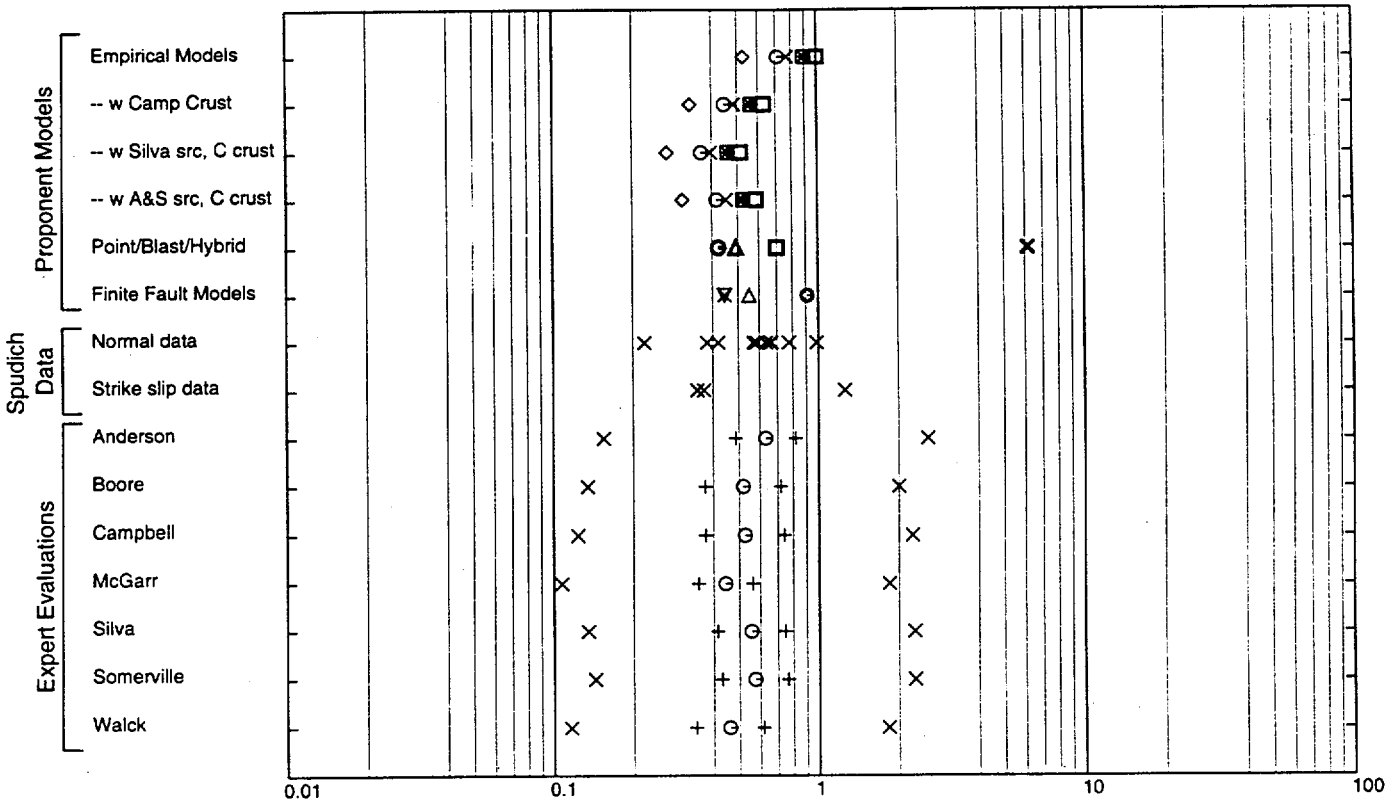
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

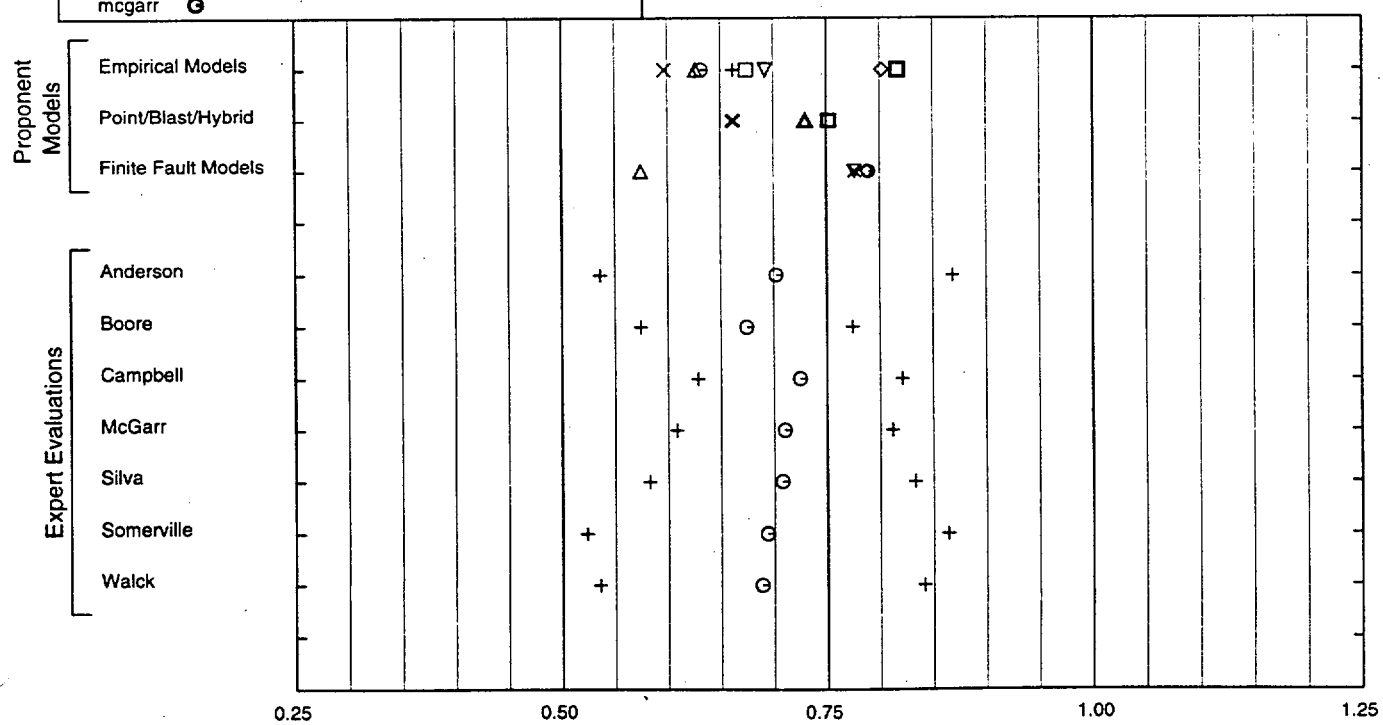
case 9, M= 6.5, shallow, xd= -1 km, FW, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

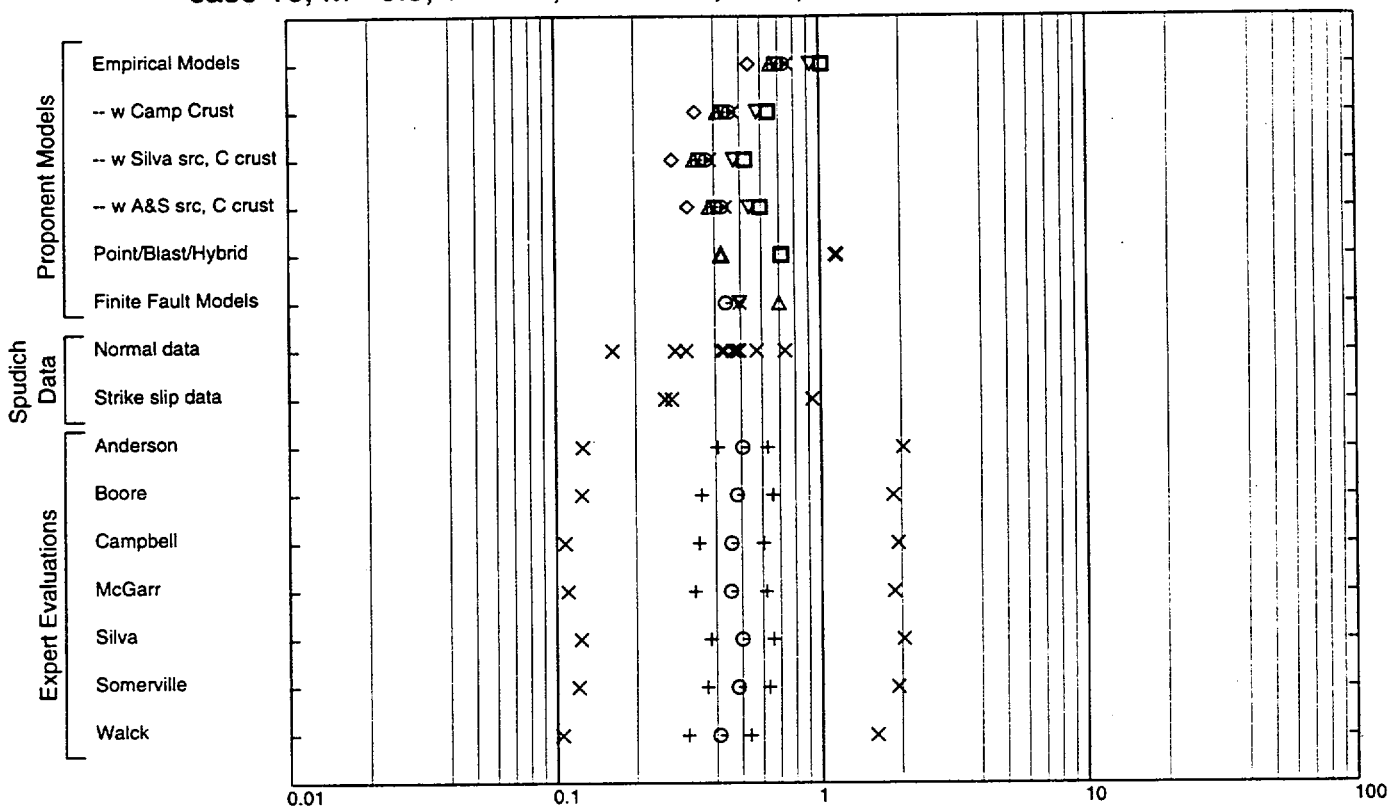
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

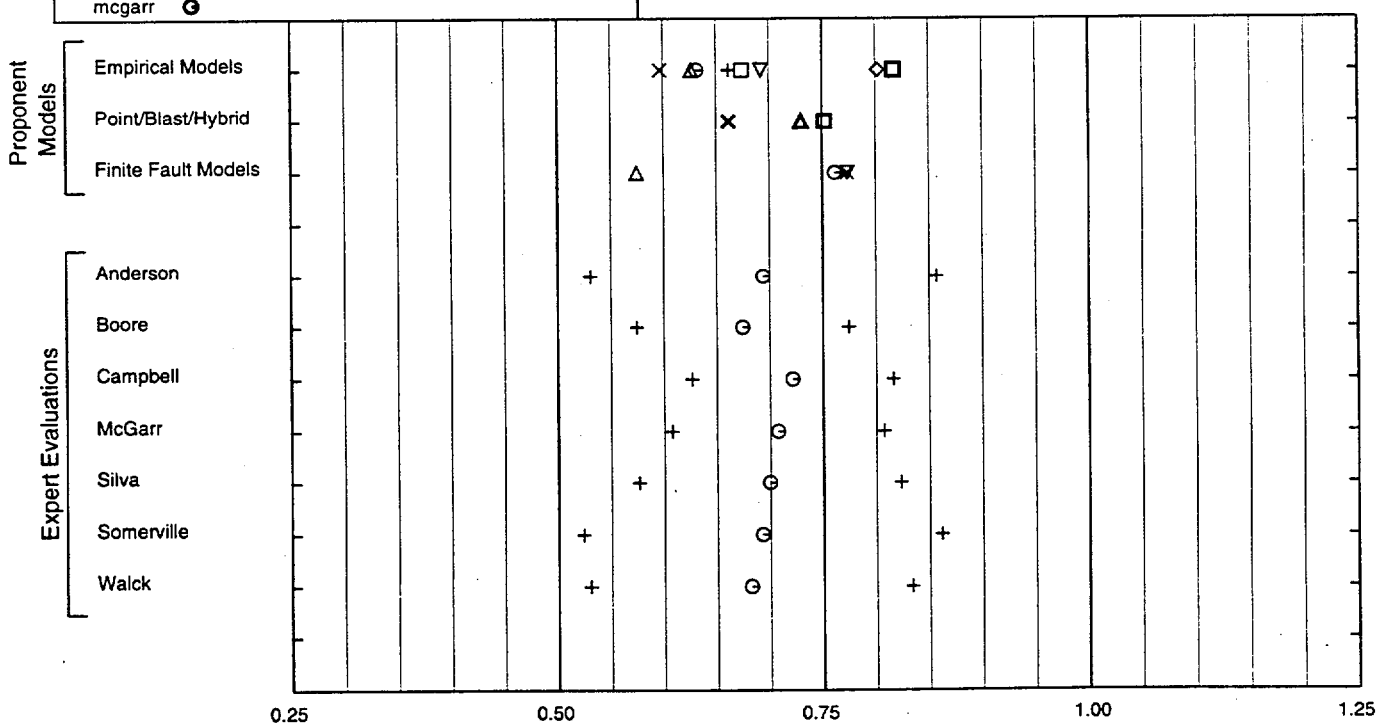
case 10, M= 6.5, shallow, xd= 5 km, HW, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

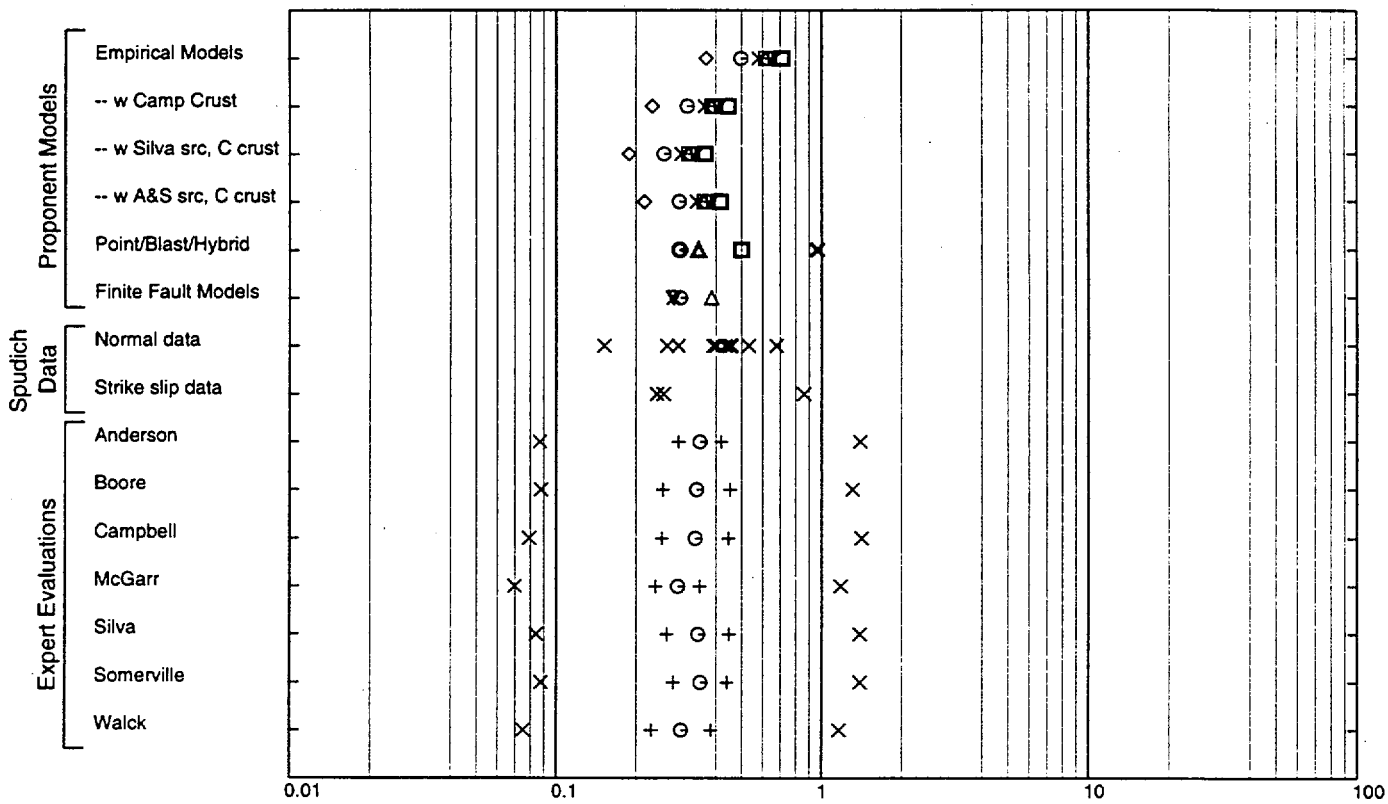
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

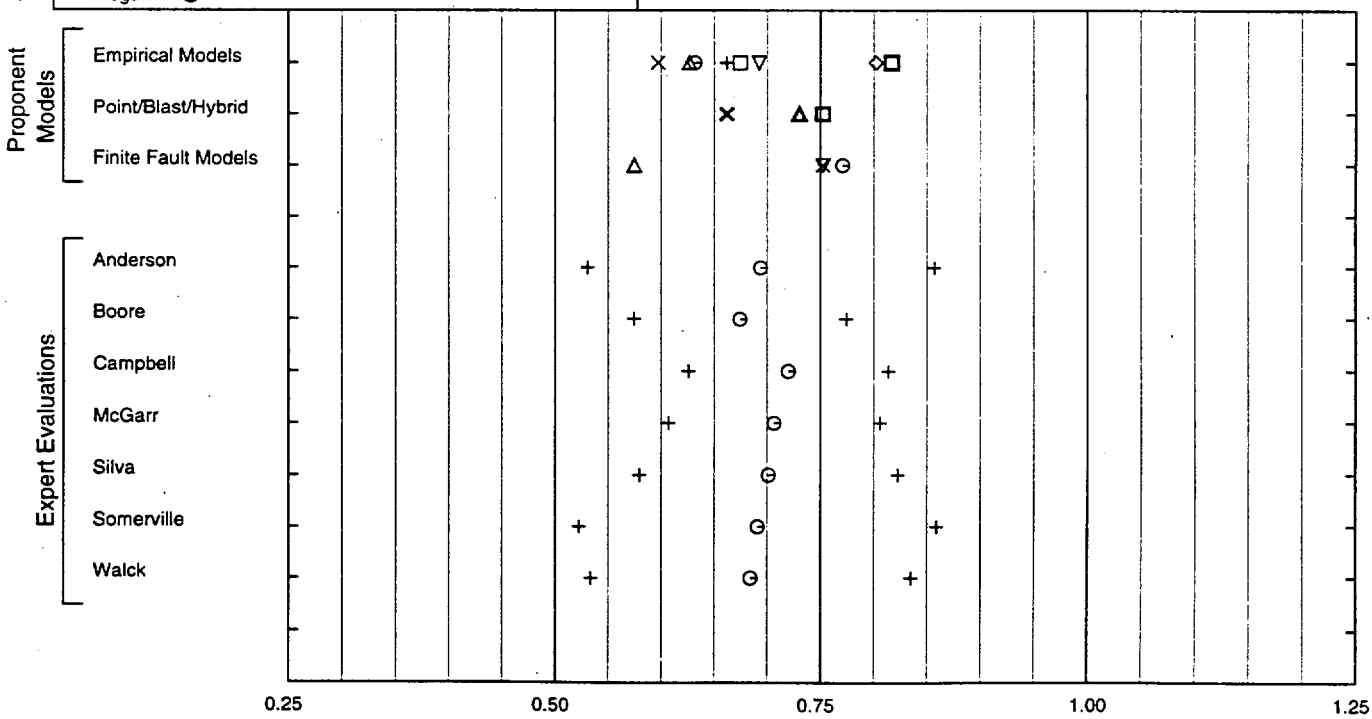
case 11, M= 6.5, shallow, xd= -5 km, FW, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

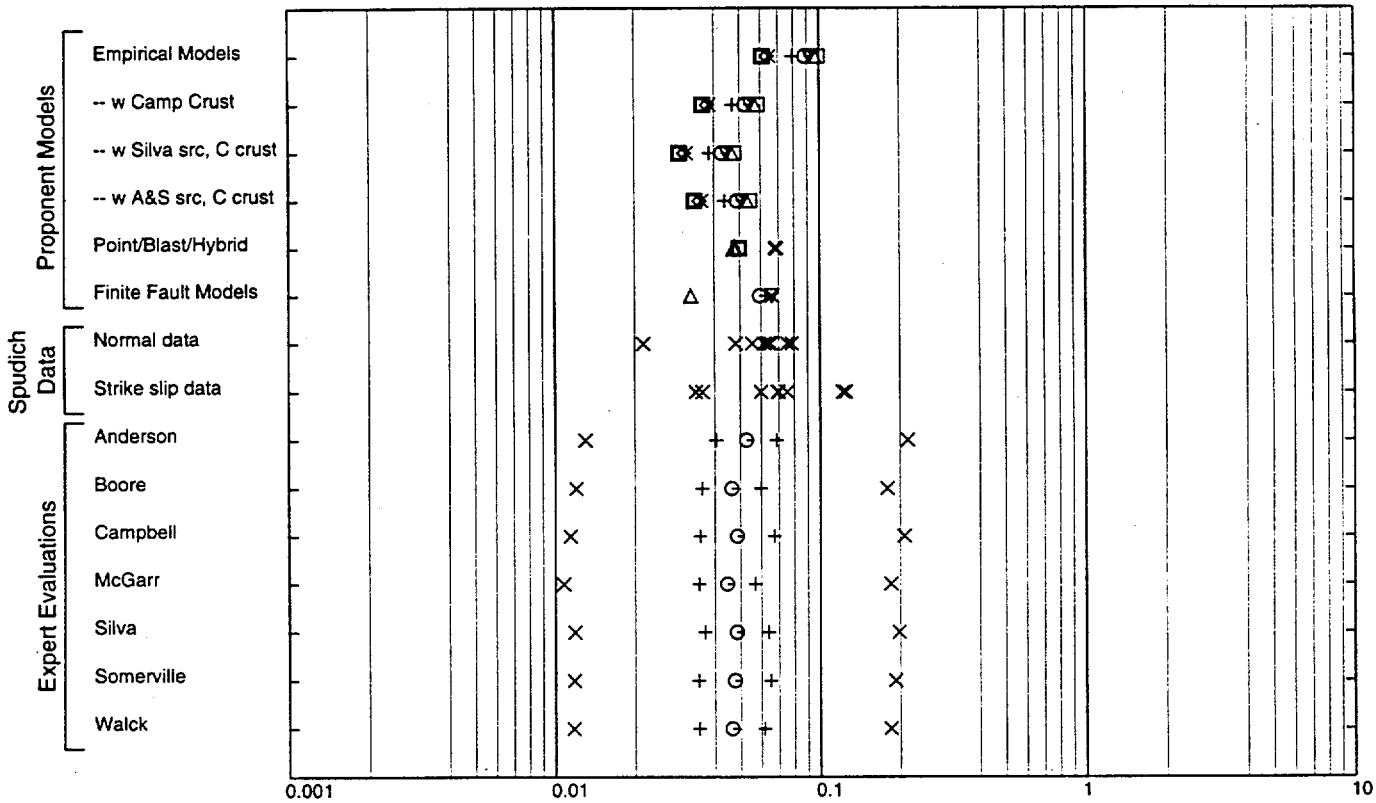
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



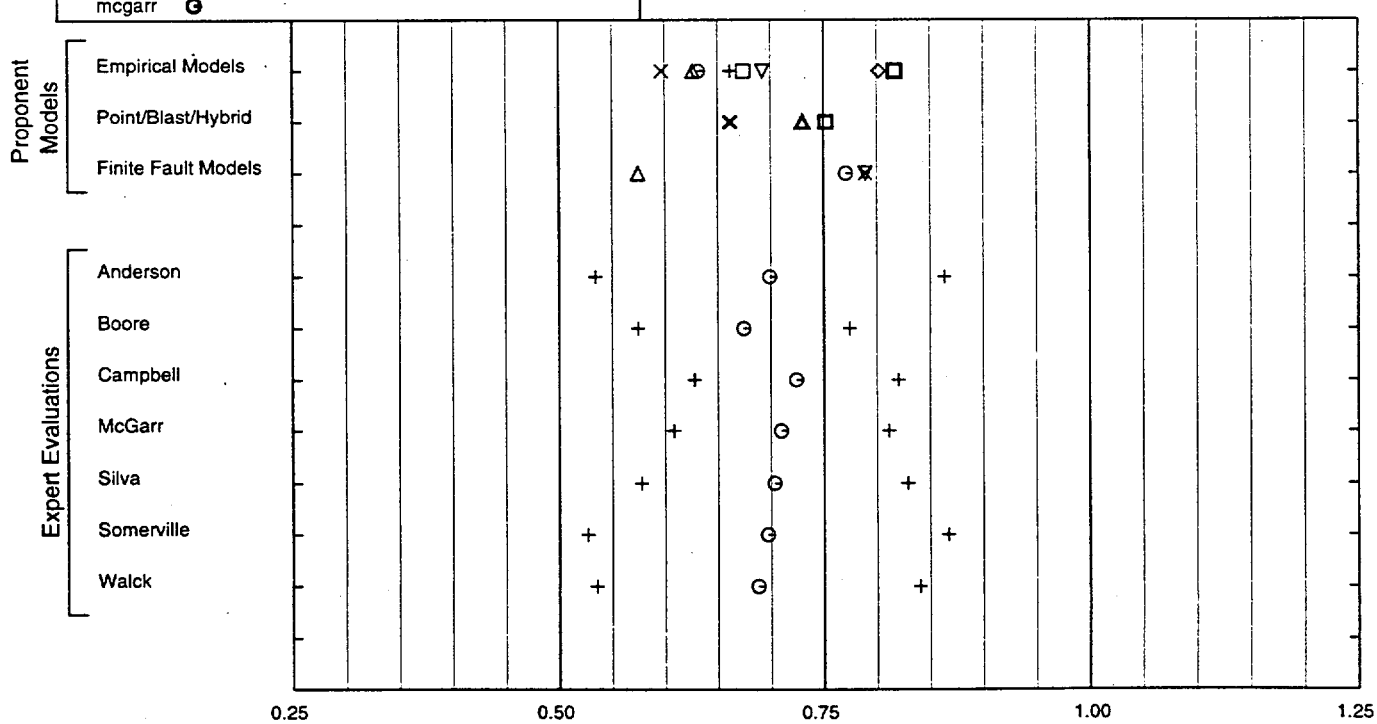
Aleatory Sigma (LN units) w/ Comp Var.

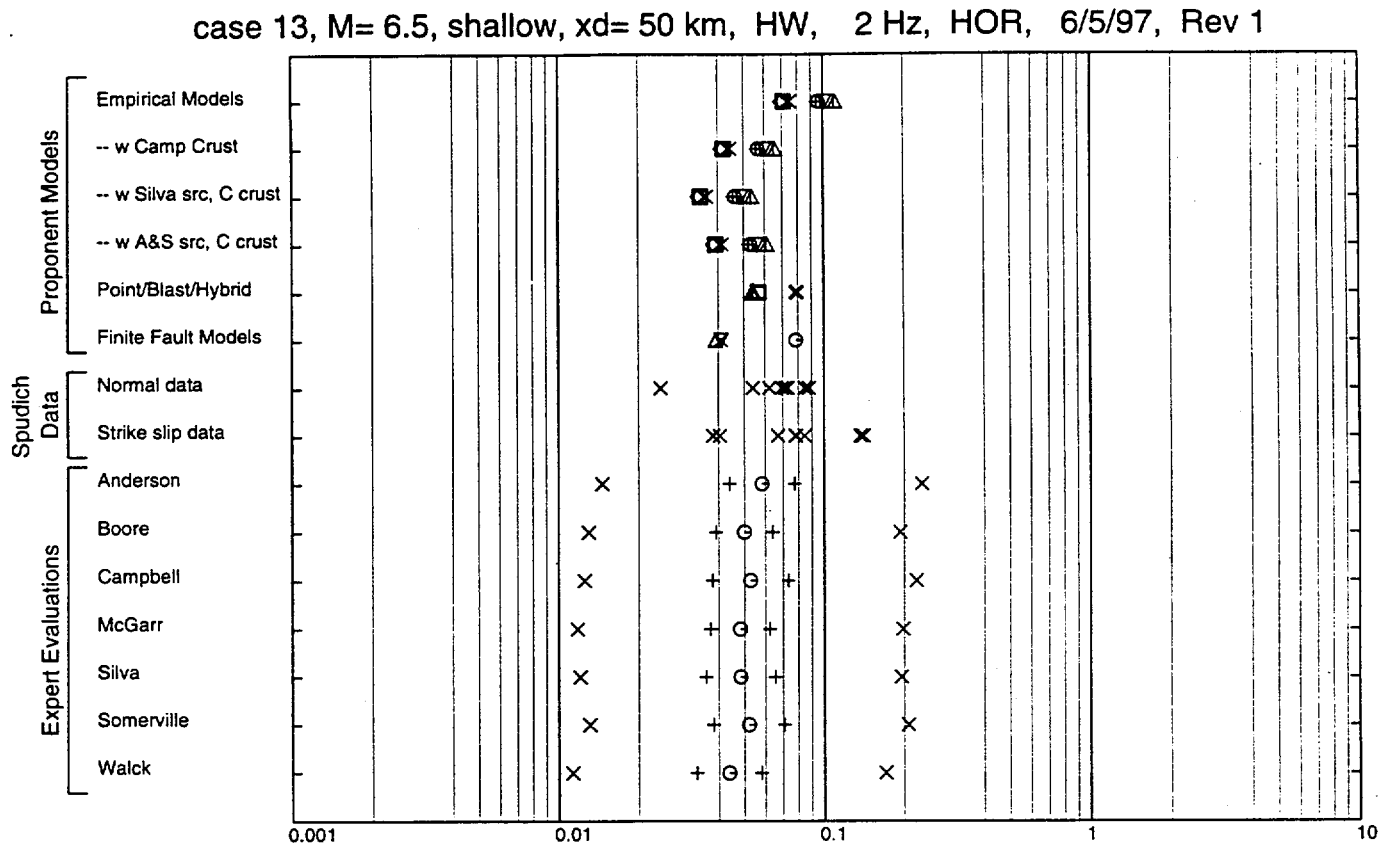
case 12, M= 6.5, shallow, xd= 50 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



LEGEND

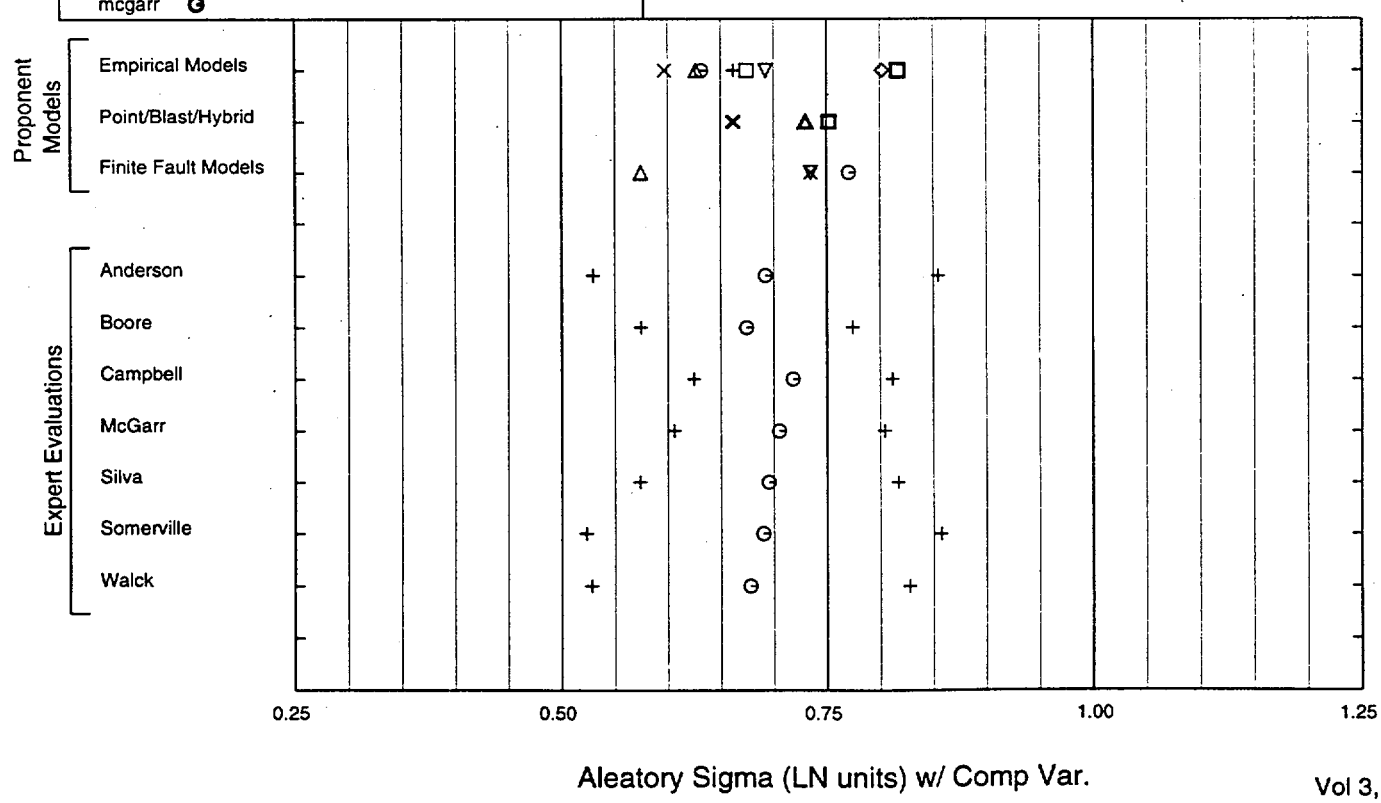
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



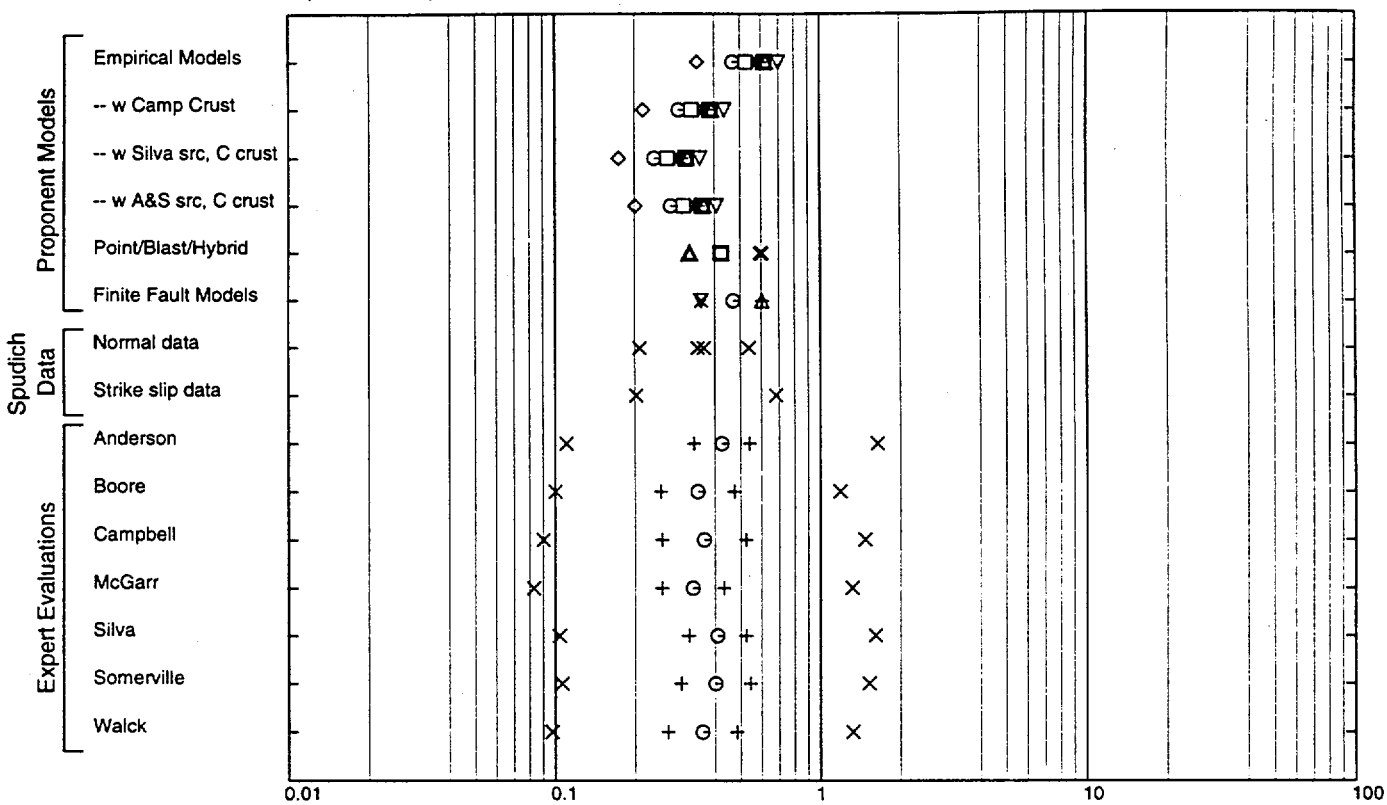


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



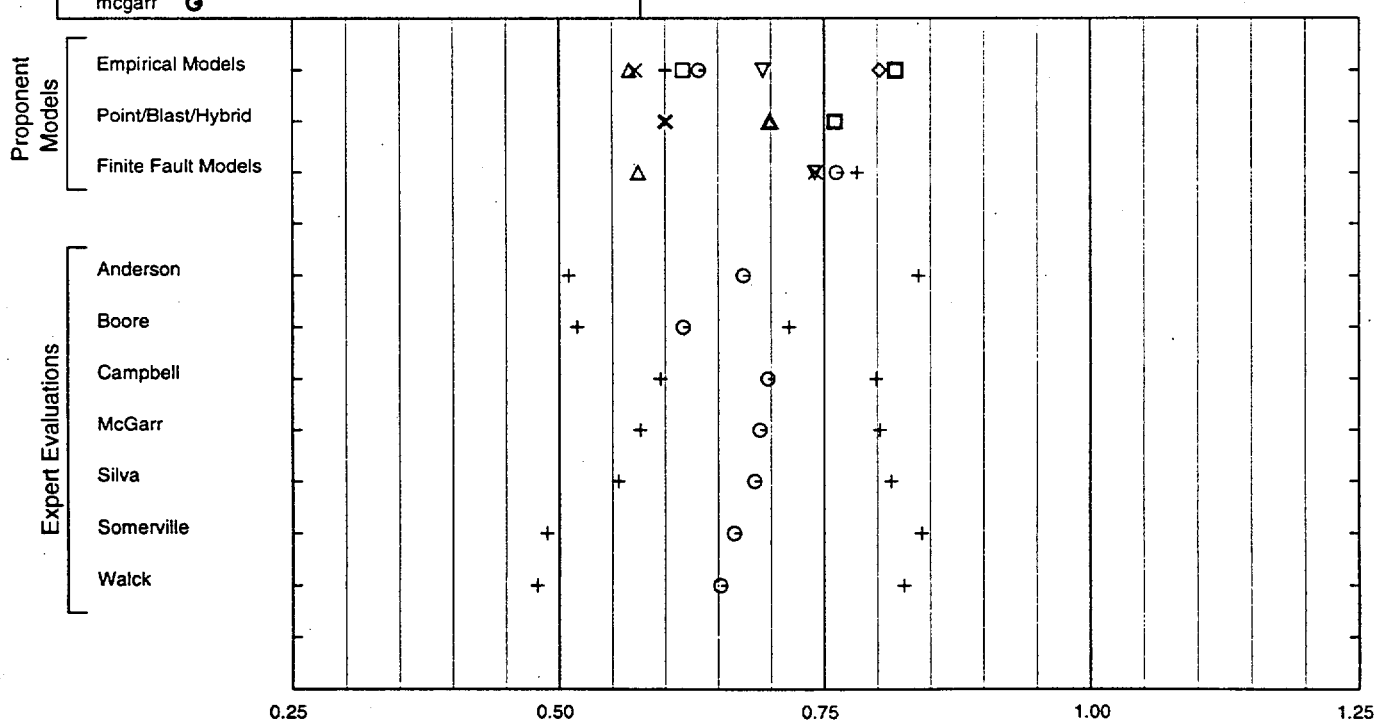
case 14, M= 7.0, shallow, xd= 10 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



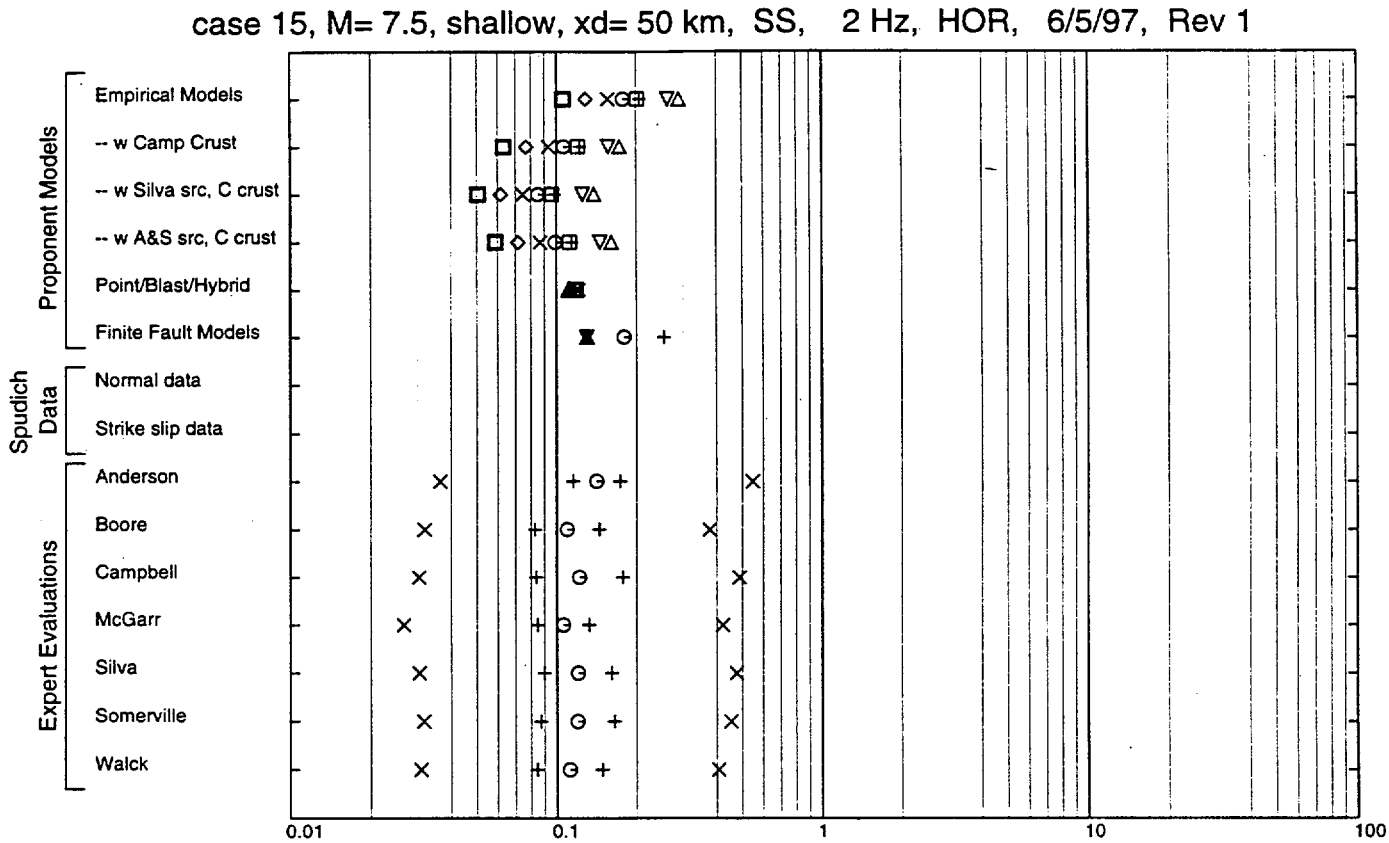
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)

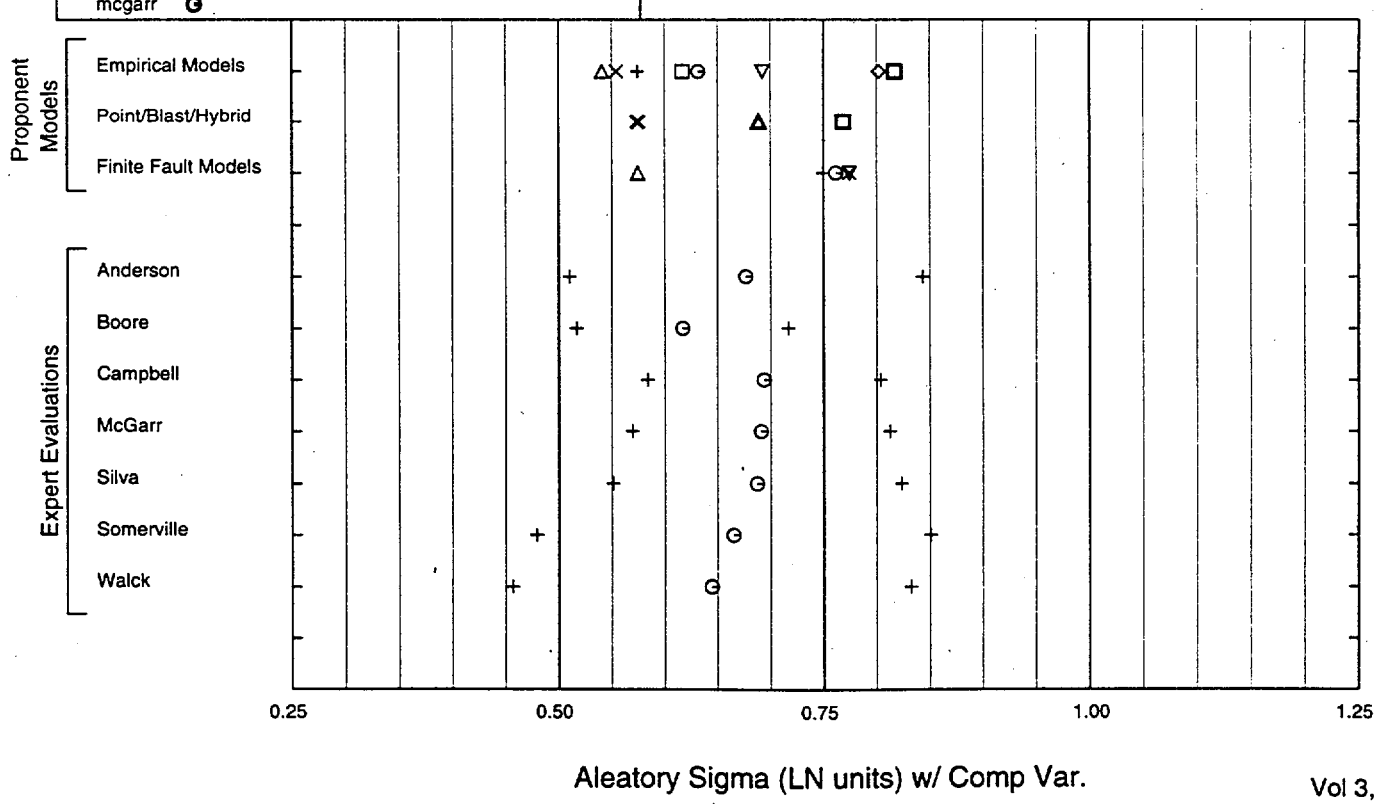


Aleatory Sigma (LN units) w/ Comp Var.

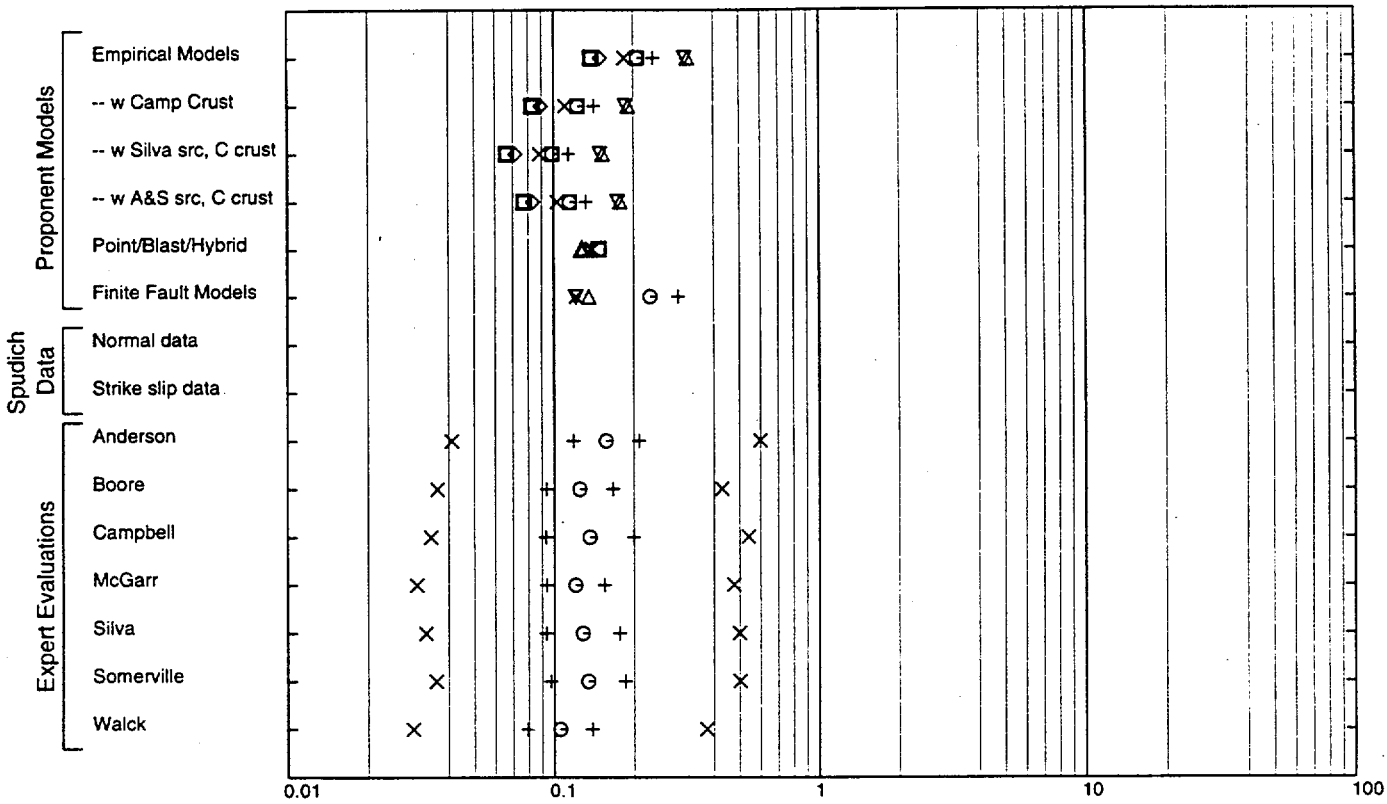


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

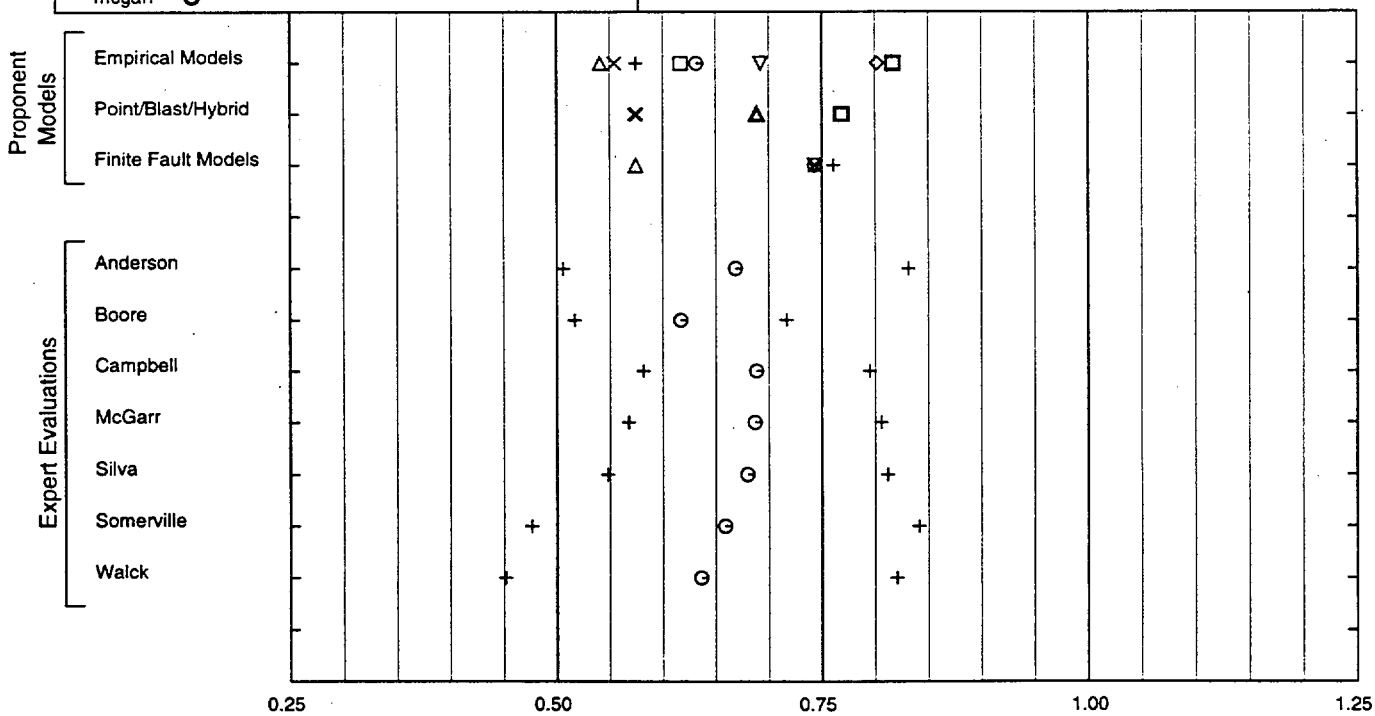


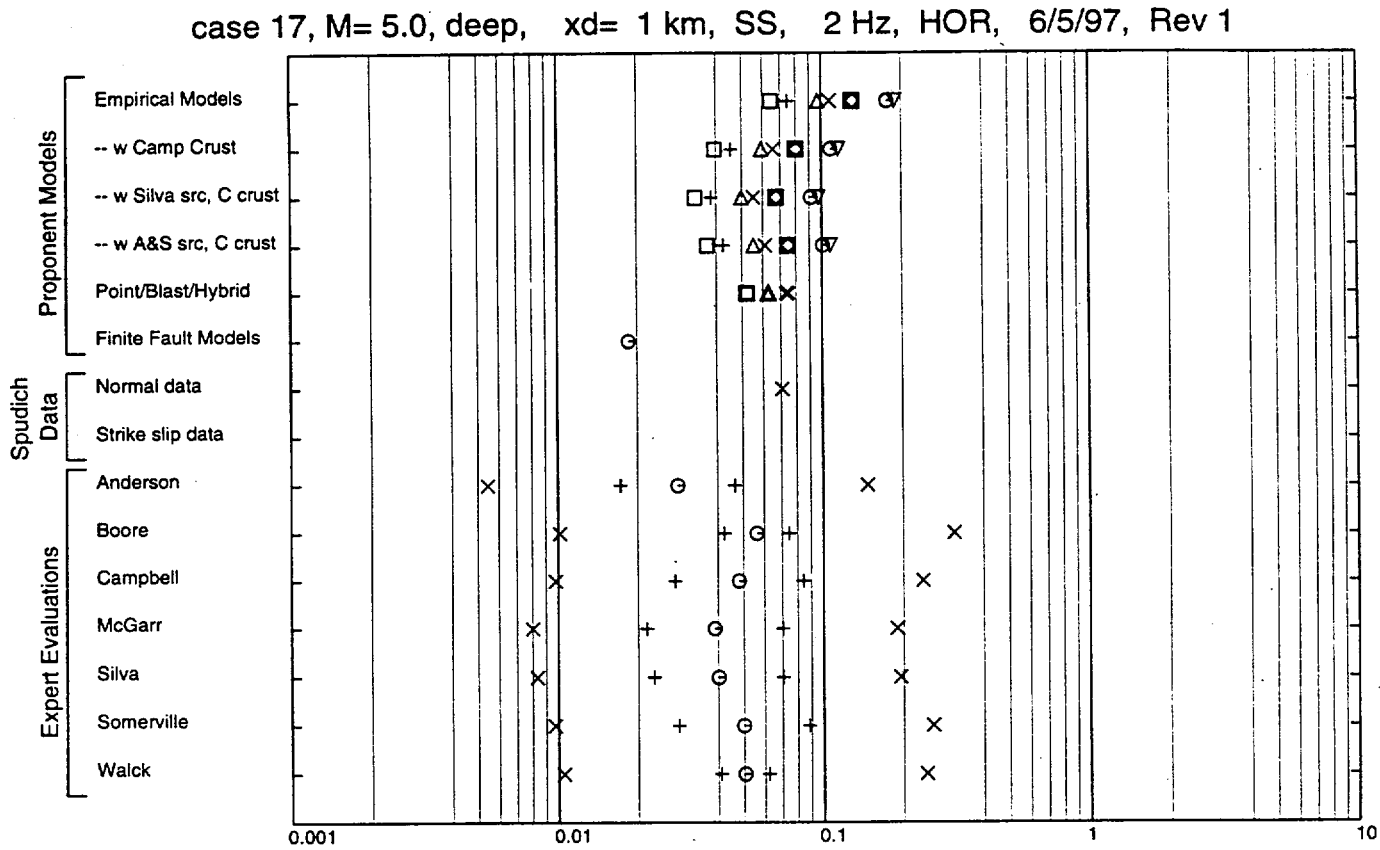
case 16, M= 7.5, shallow, xd= 50 km, HW, 2 Hz, HOR, 6/5/97, Rev 1

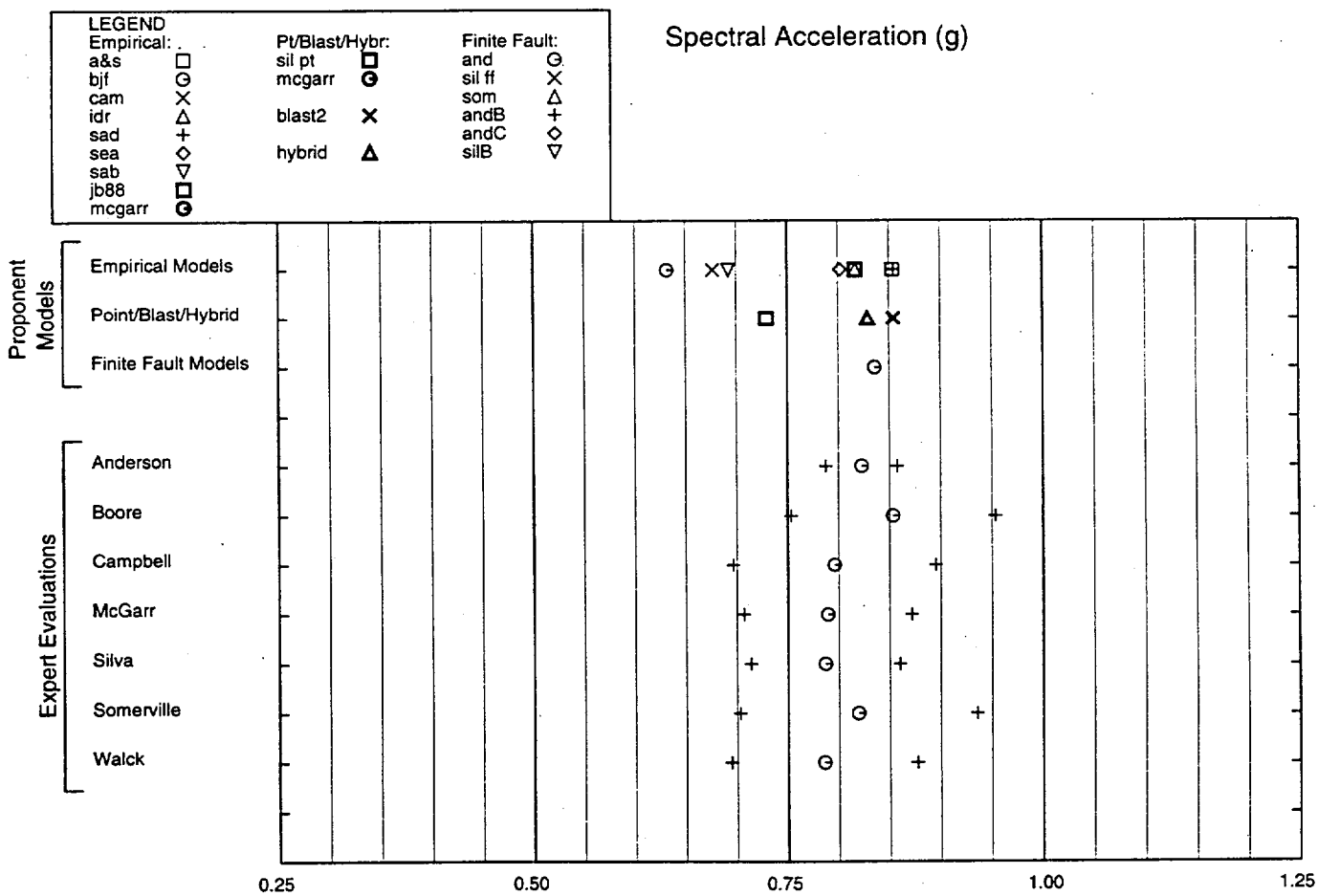


LEGEND

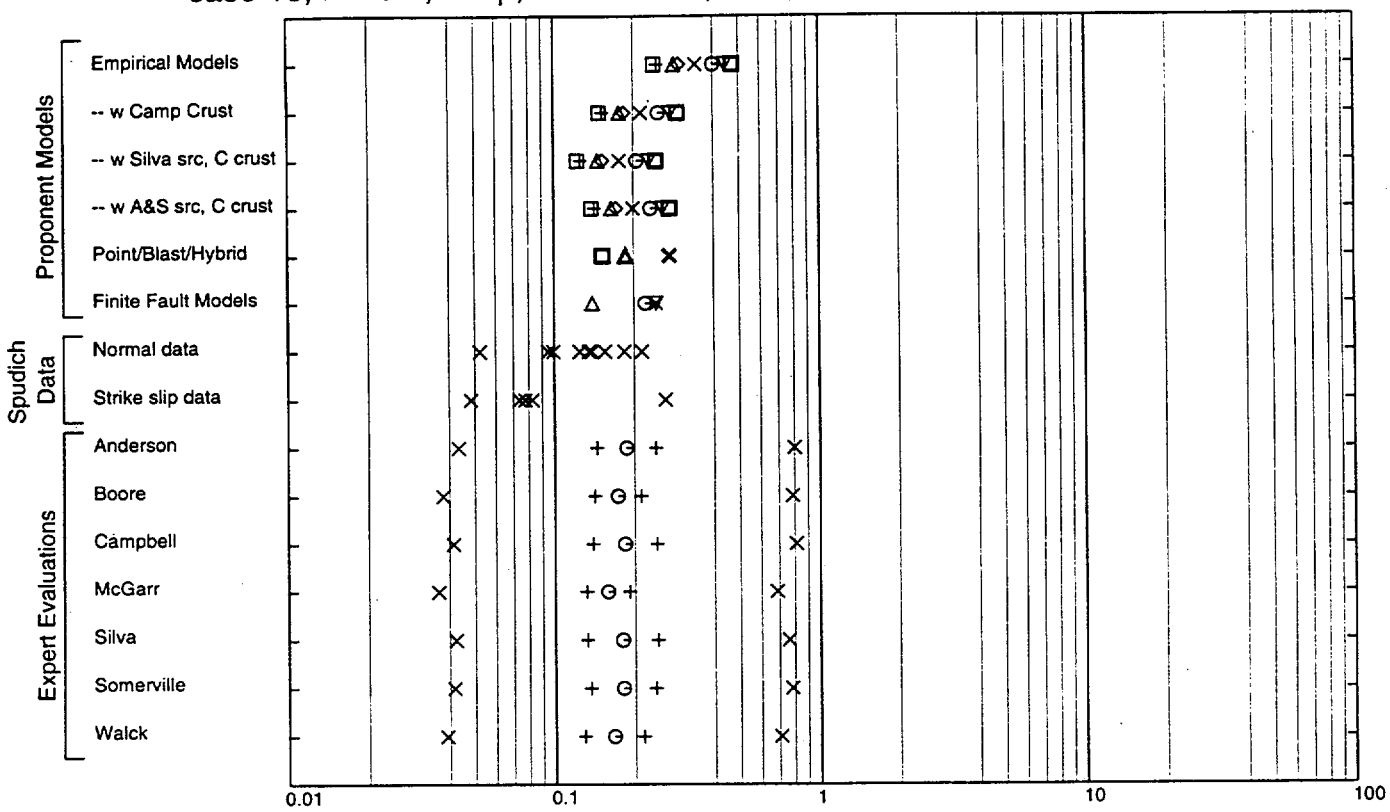
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				




case 17, M= 5.0, deep, xd= 1 km, SS, 2 Hz, HOR, 6/5/97, Rev 1
Proponent Models
Empirical Models
-- w Camp Crust
-- w Silva src, C crust
-- w A&S src, C crust
Point/Blast/Hybrid
Finite Fault Models
Spudich Data
Normal data
Strike slip data
Expert Evaluations
Anderson
Boore
Campbell
McGarr
Silva
Somerville
Walck
0.001
0.01
0.1
1
10
Spectral Acceleration (g)

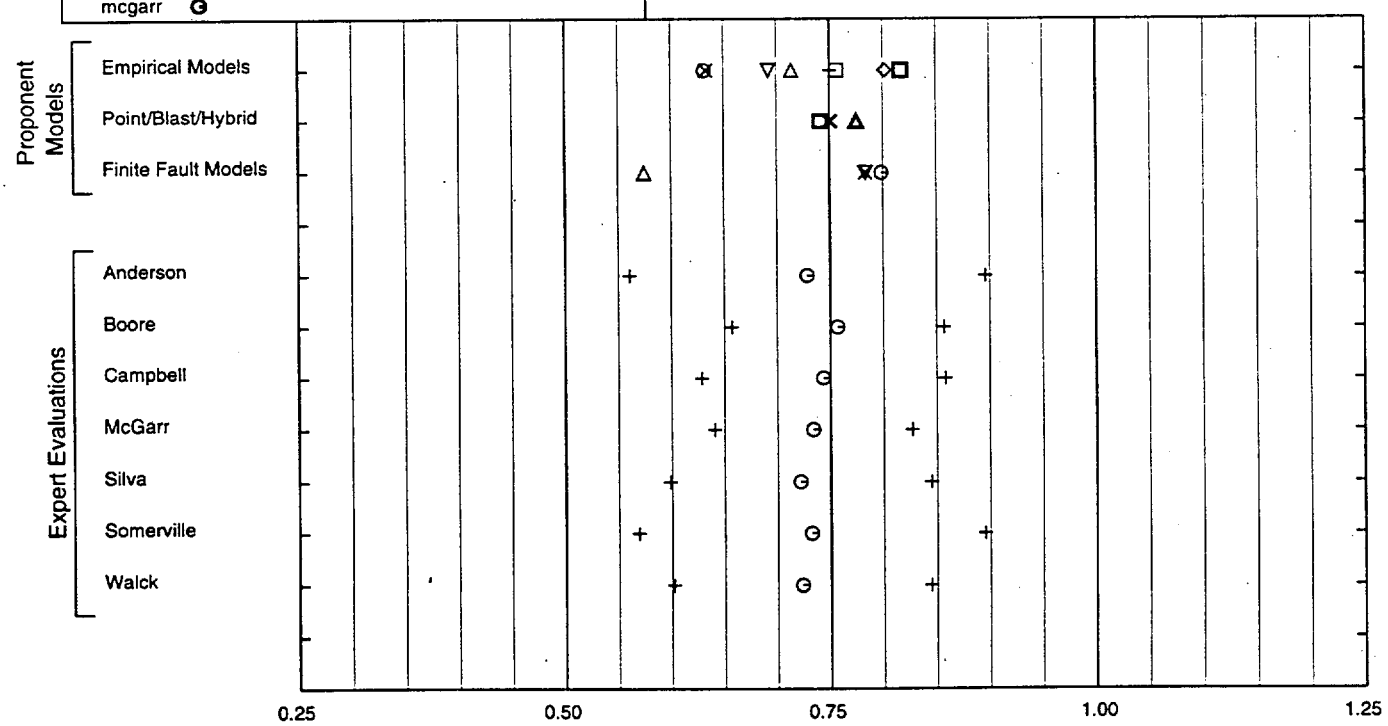

LEGEND
Empirical:
a&s
bjf
cam
idr
sad
sea
sab
jb88
mcgarr
Pt/Blast/Hybr:
sil pt
mcgarr
blast2
hybrid
Finite Fault:
and
sil ff
som
andB
andC
silB
Proponent Models
Empirical Models
Point/Blast/Hybrid
Finite Fault Models
Expert Evaluations
Anderson
Boore
Campbell
McGarr
Silva
Somerville
Walck
0.25
0.50
0.75
1.00
1.25
Aleatory Sigma (LN units) w/ Comp Var.

case 18, M= 5.8, deep, xd= 5 km, HW, 2 Hz, HOR, 6/5/97, Rev 1

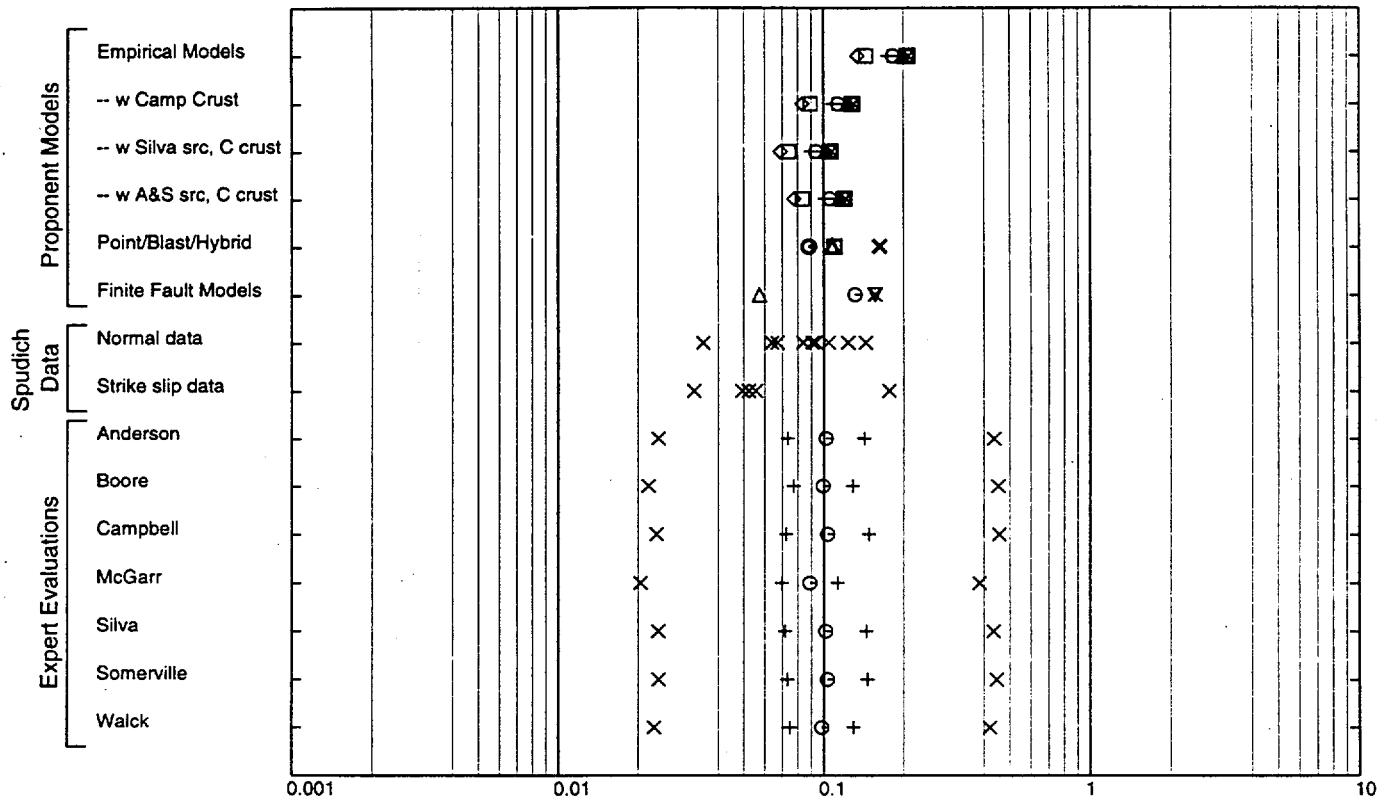


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



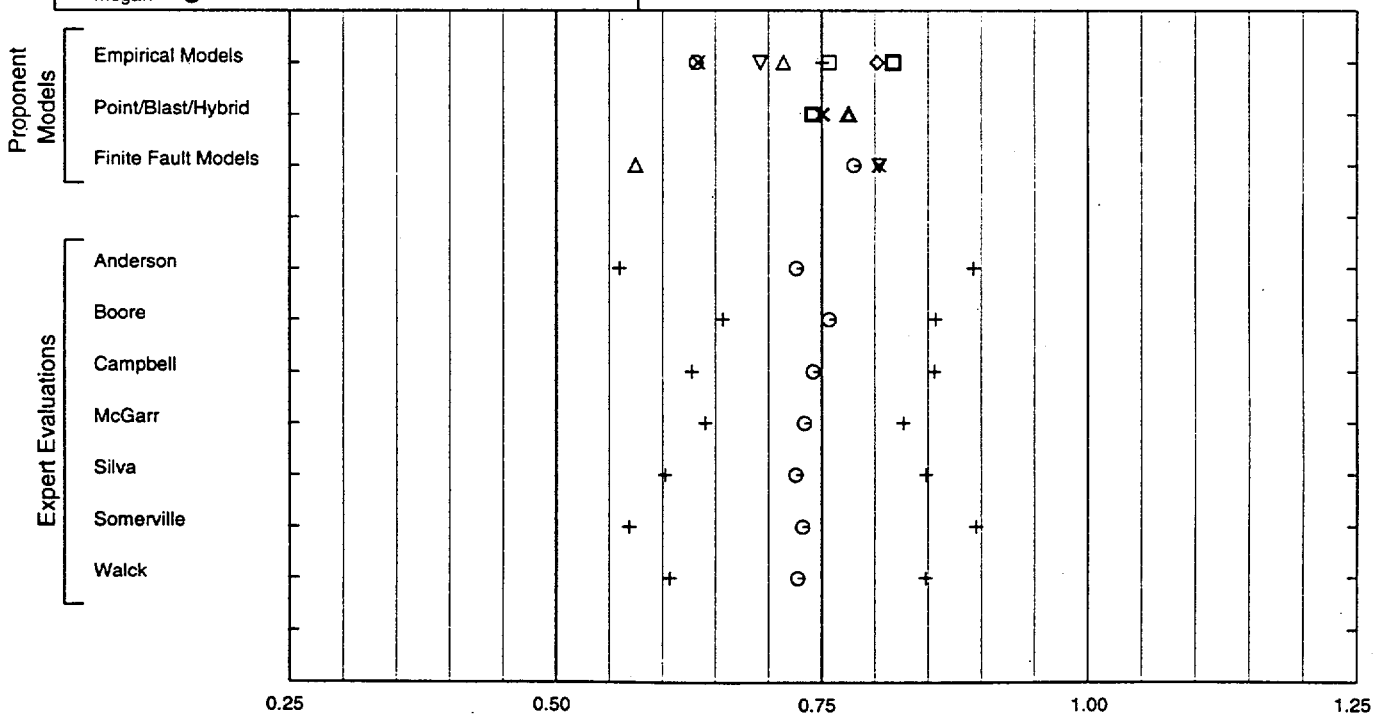
case 19, M= 5.8, deep, xd= -5 km, FW, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

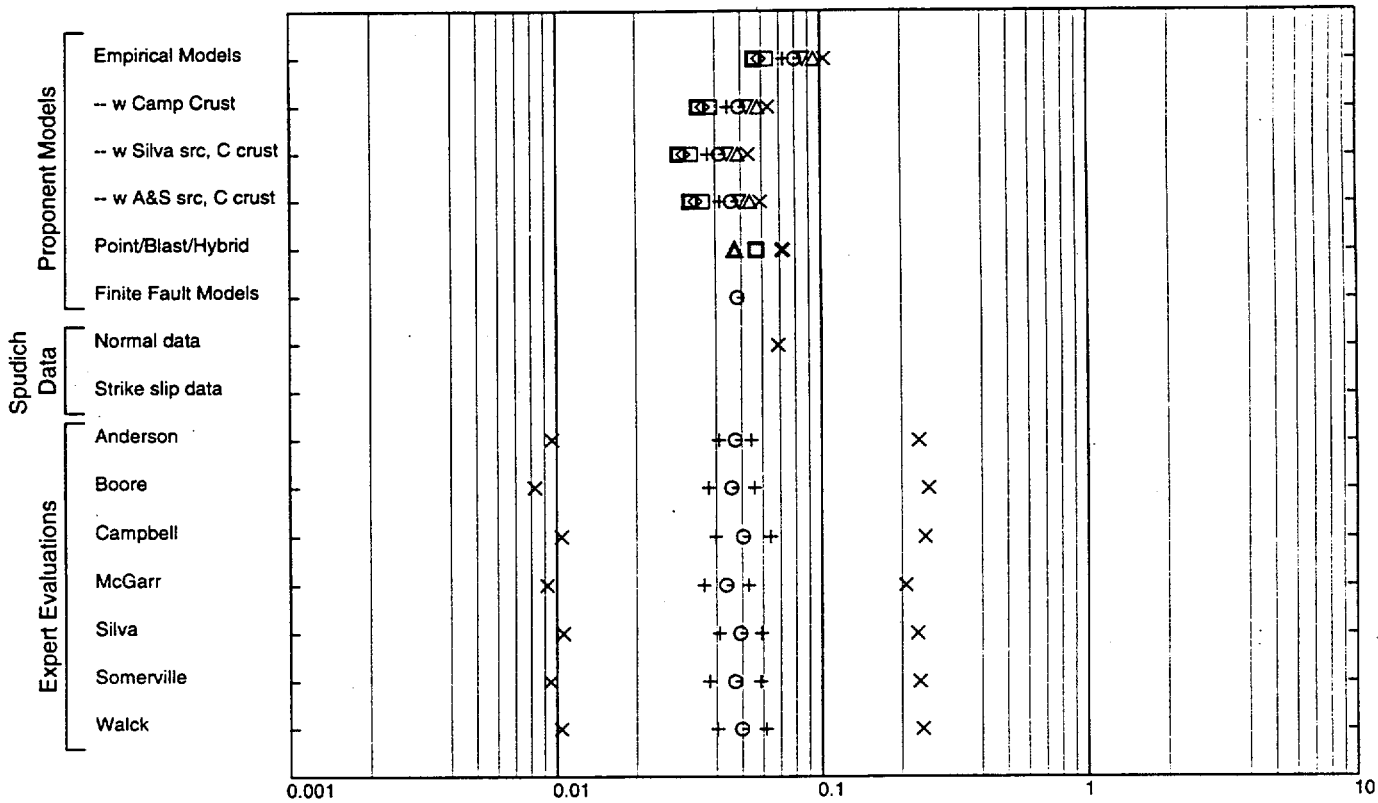
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

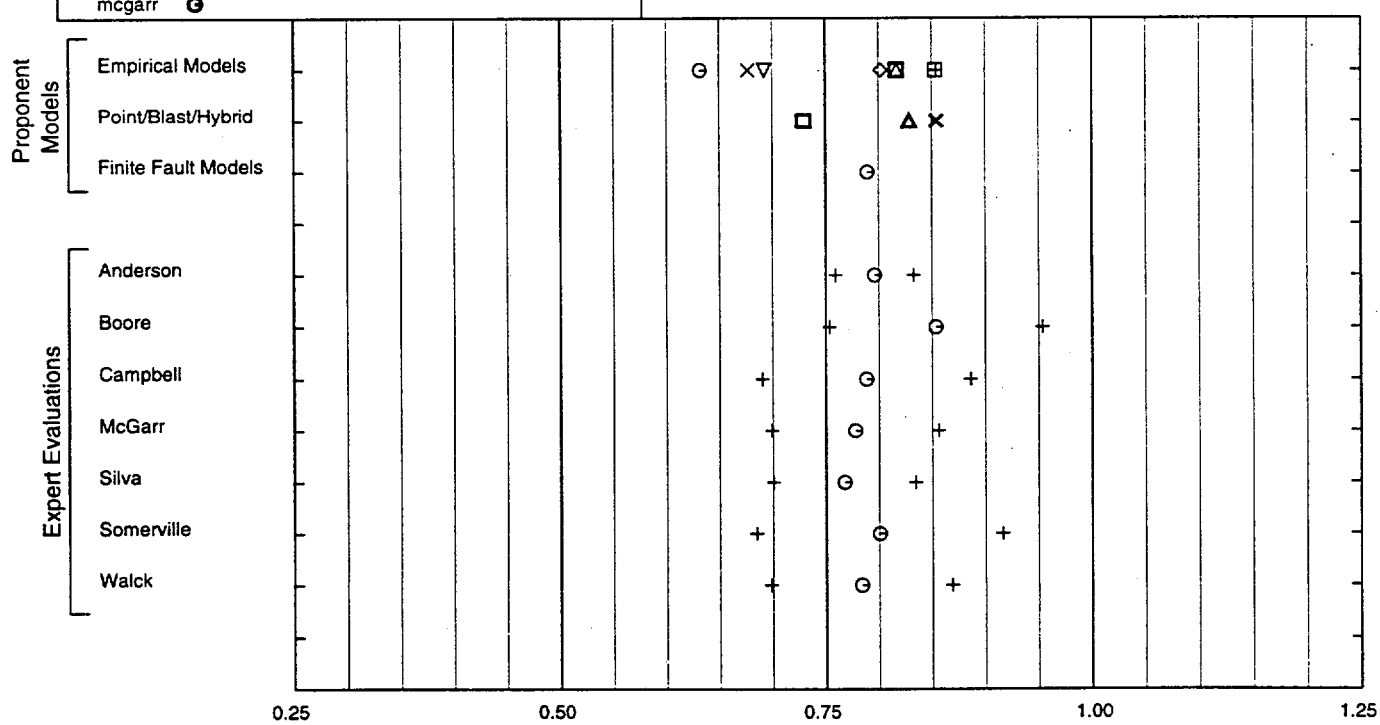
case 20, M= 5.0, shallow, xd= 10 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



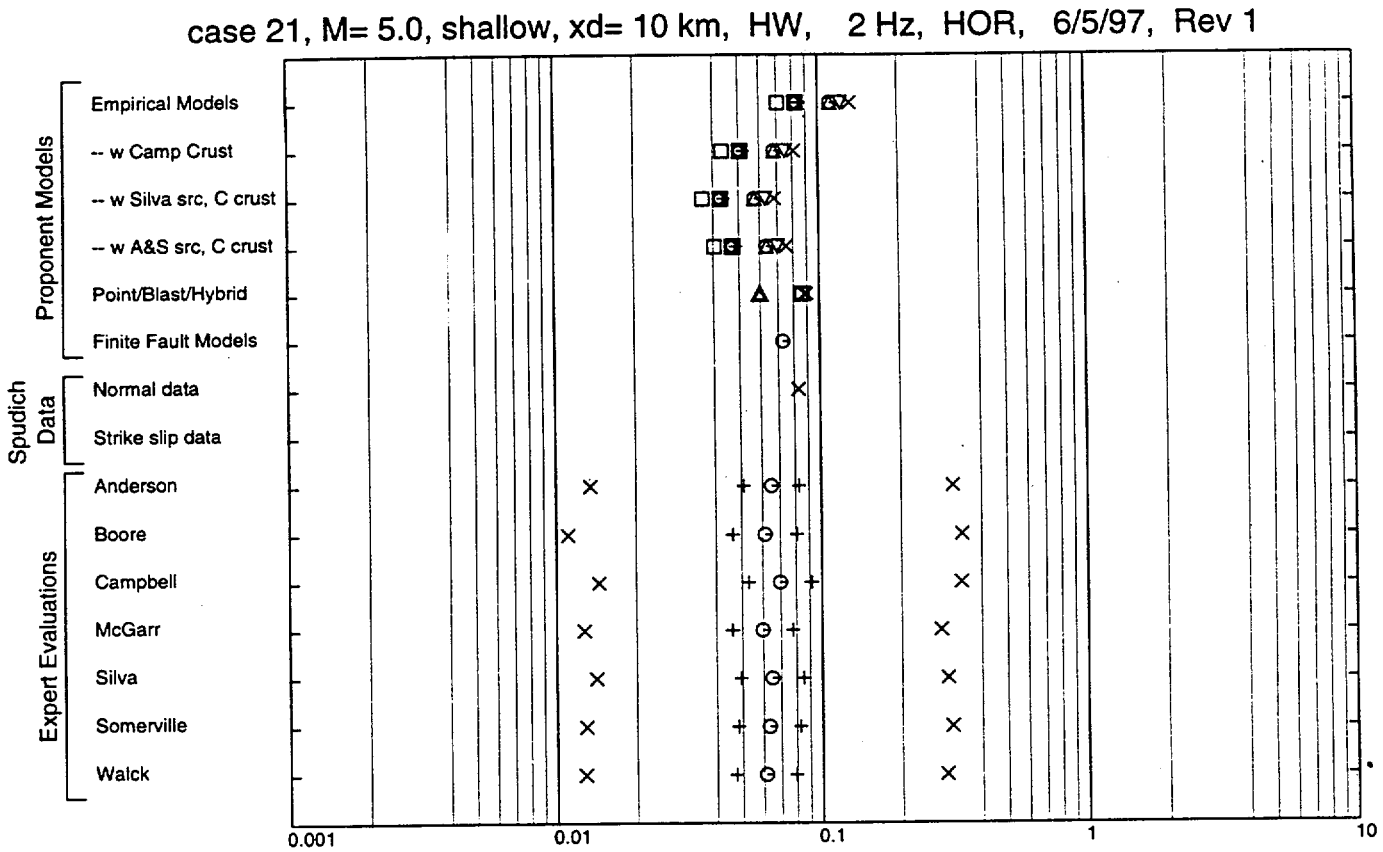
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

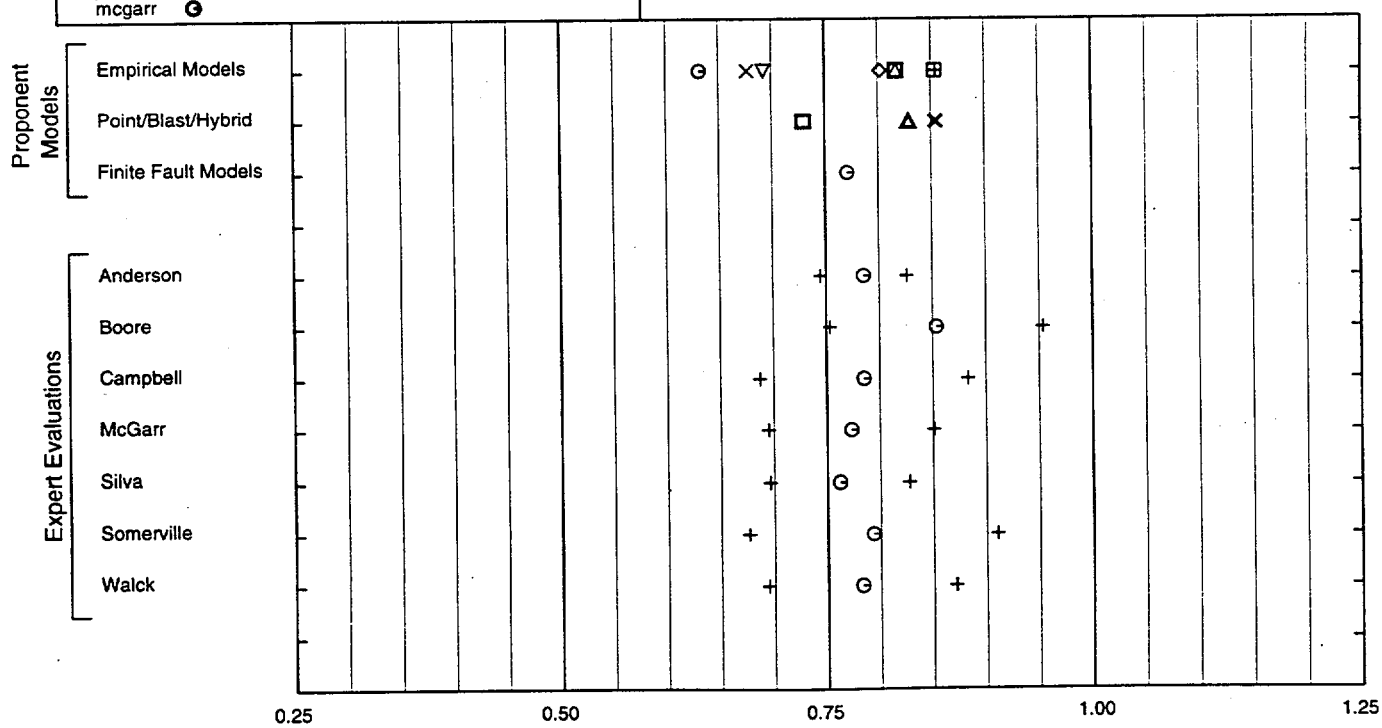


Aleatory Sigma (LN units) w/ Comp Var.

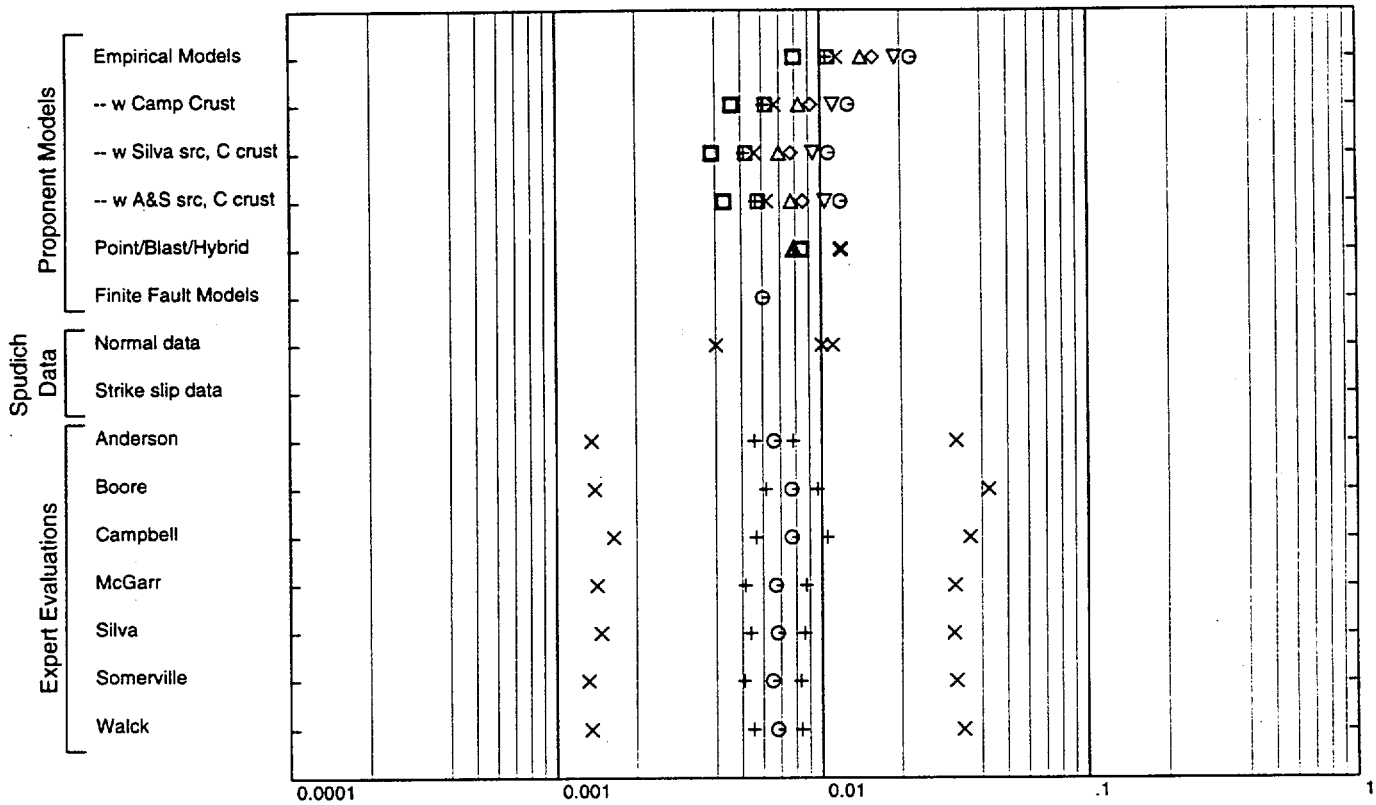


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×	blast2	×	som	△
idr	△	hybrid	▲	andB	+
sad	+			andC	◇
sea	◇			silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



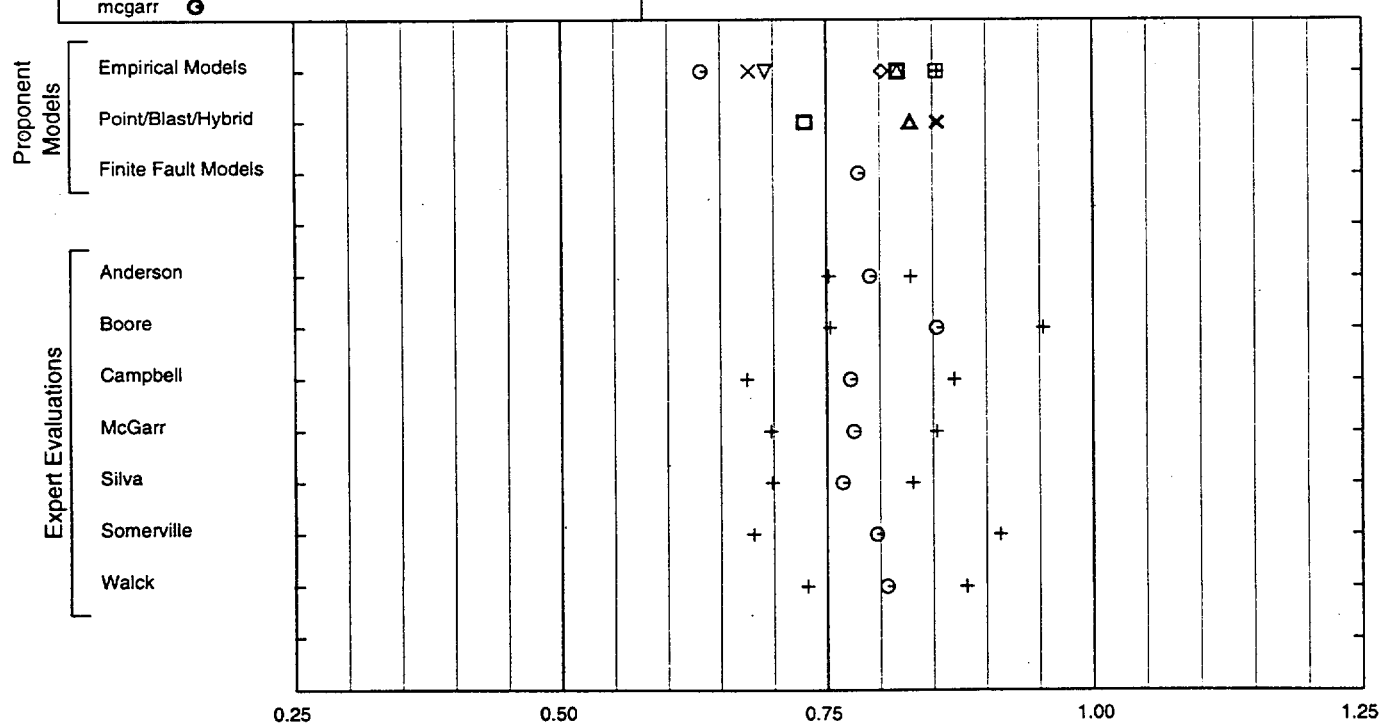
case 22, M= 5.0, shallow, xd= 50 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



LEGEND

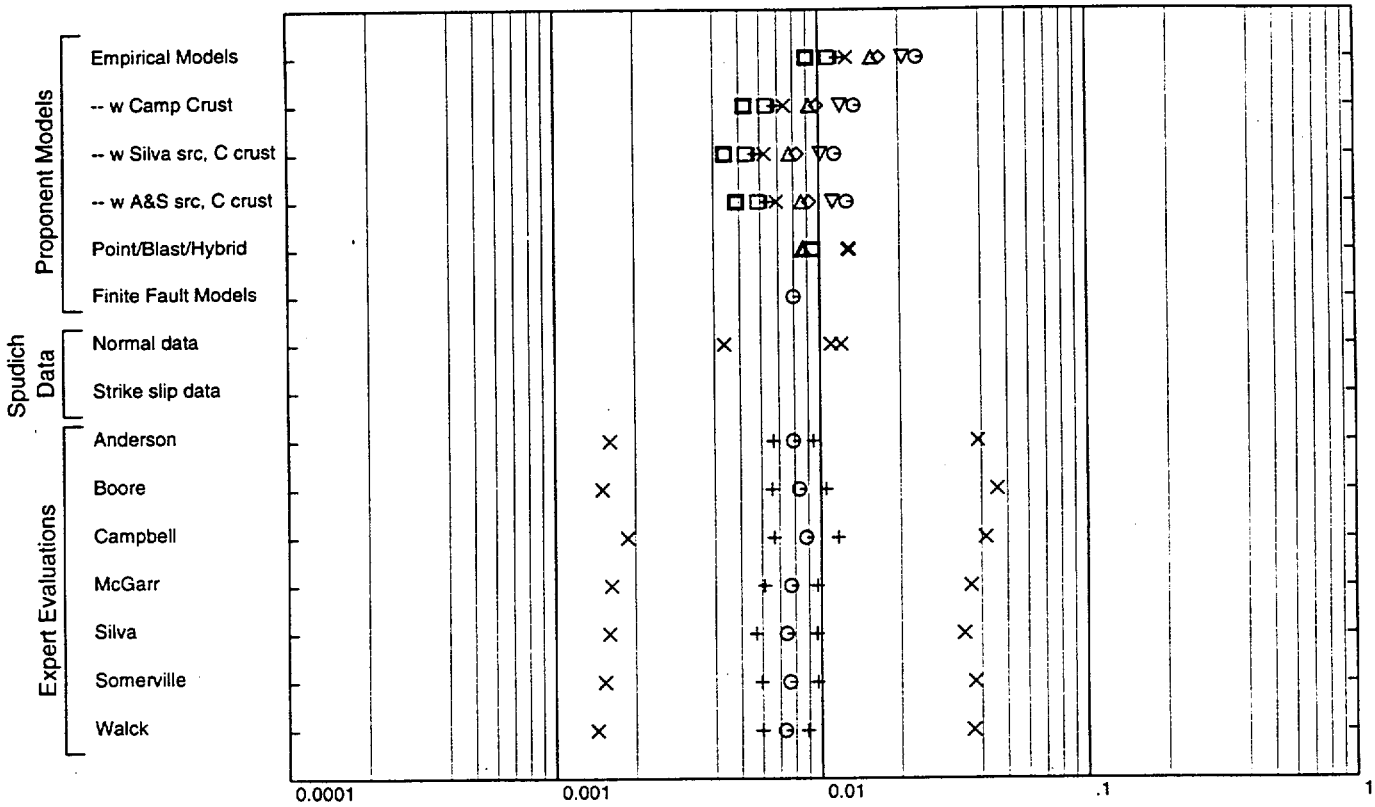
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

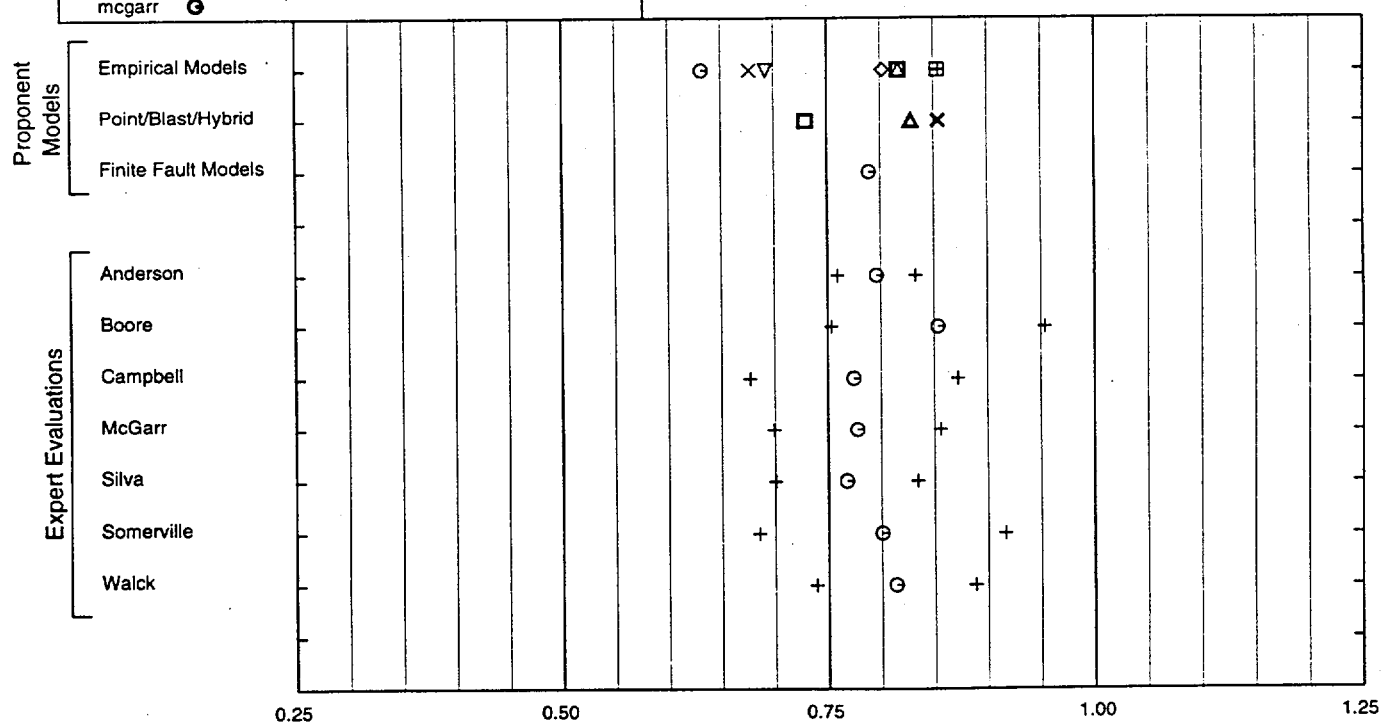
case 23, M= 5.0, shallow, xd= 50 km, HW, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

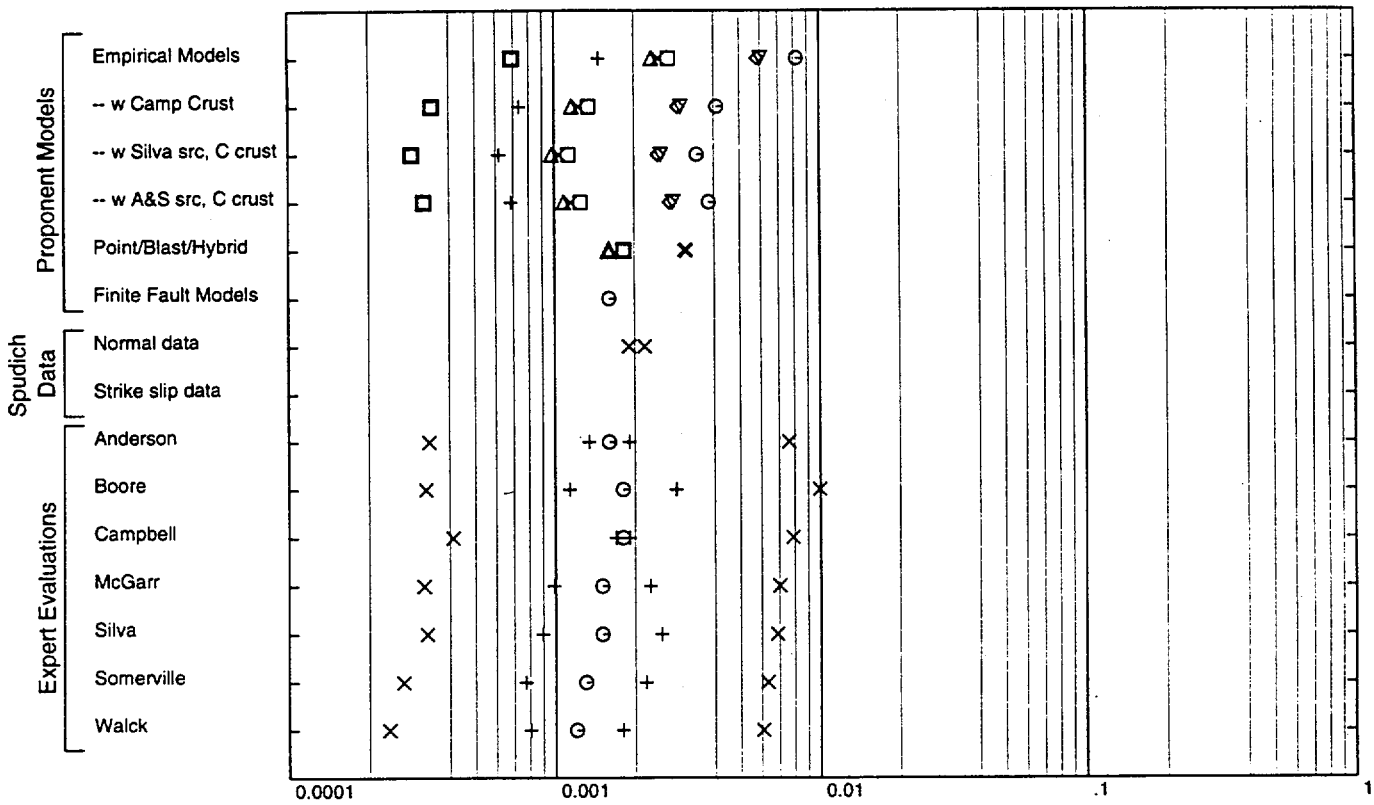
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

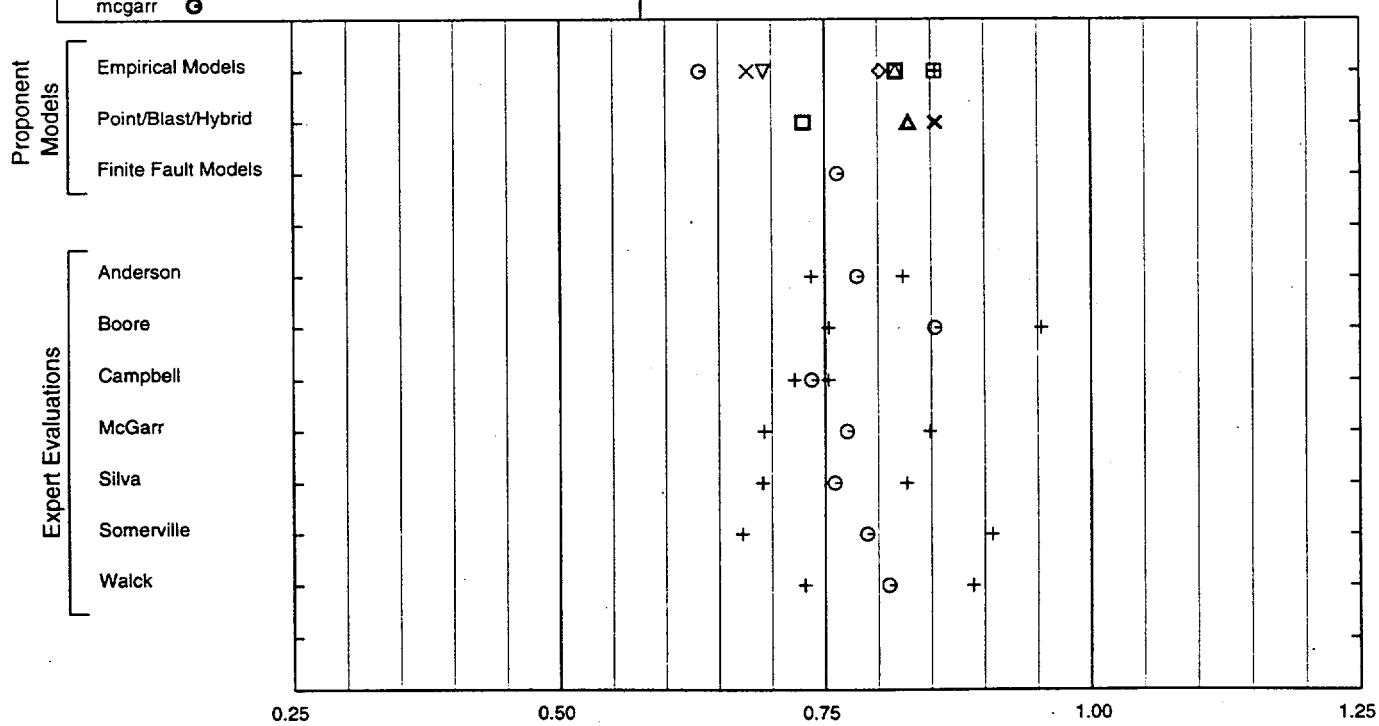
case 24, M= 5.0, shallow, xd=160 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

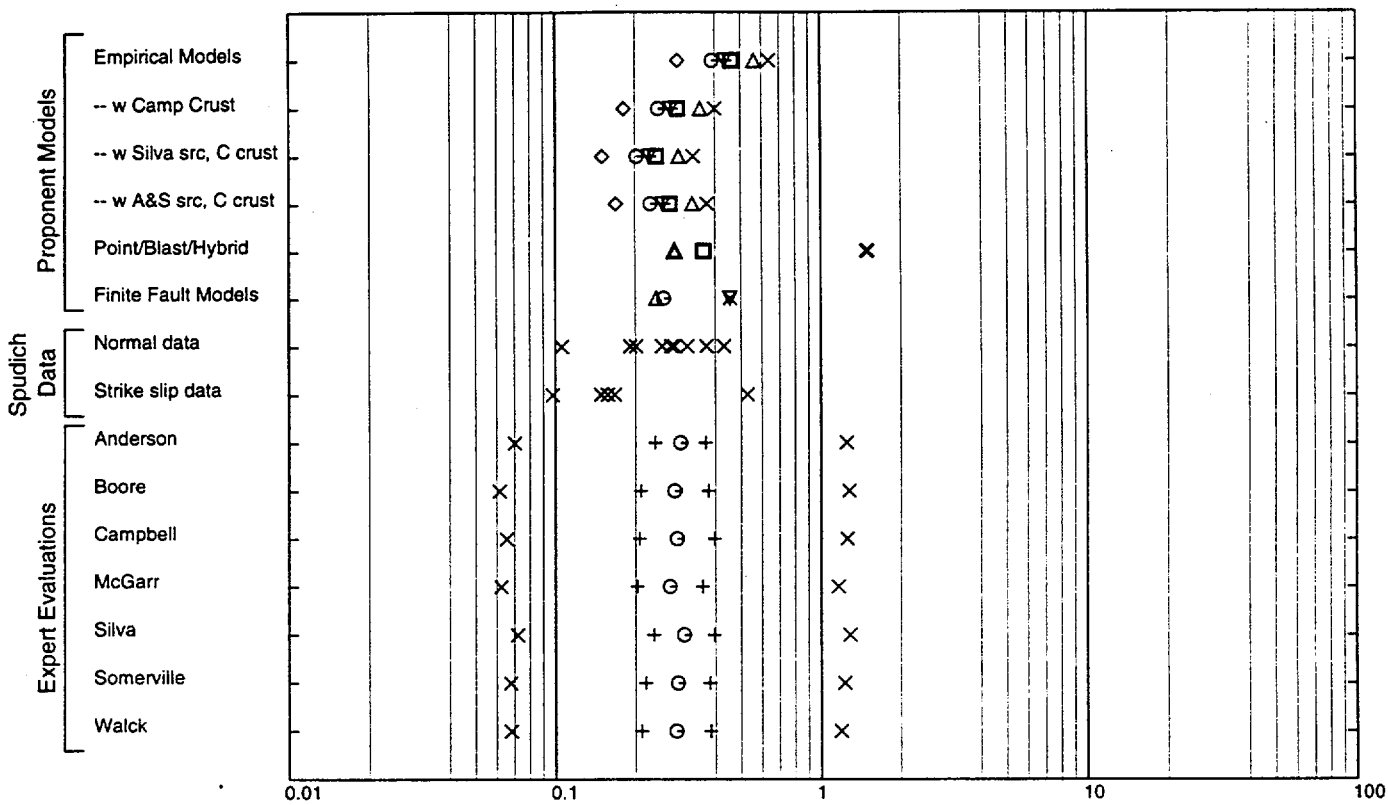
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

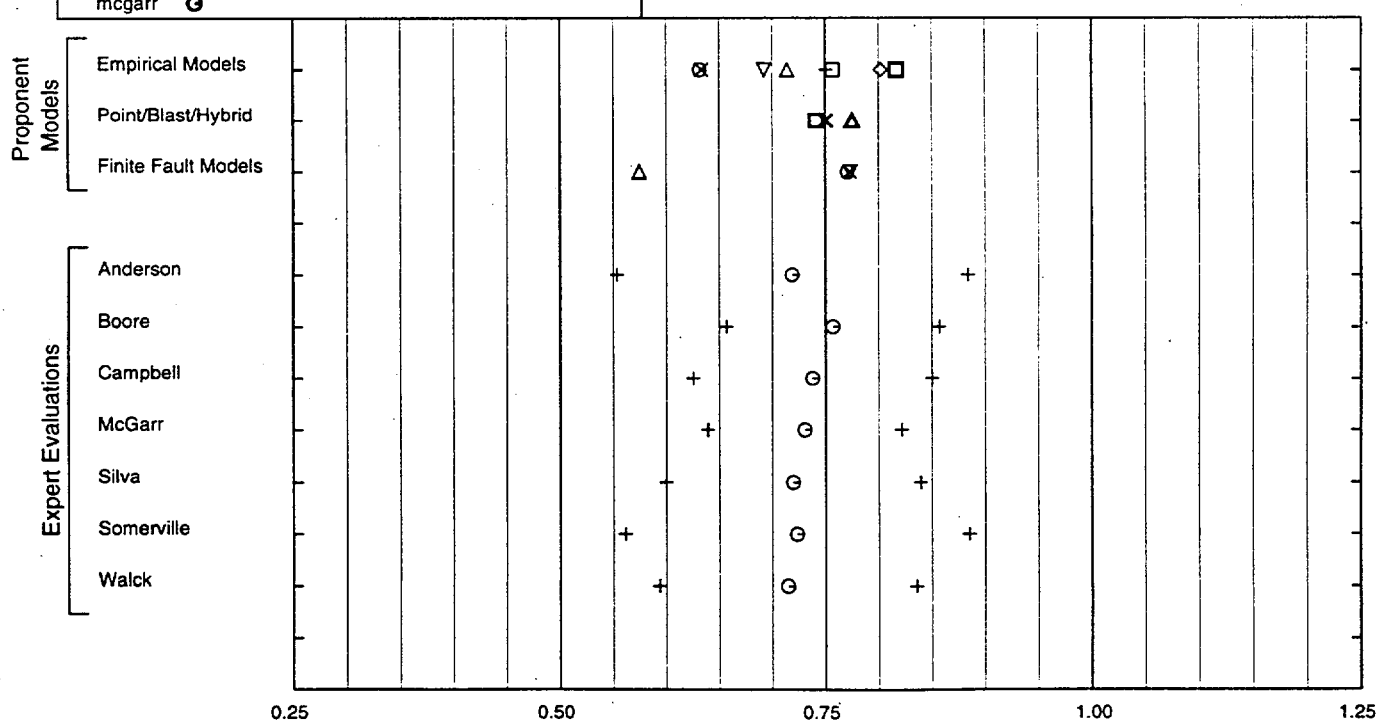
case 25, M= 5.8, shallow, xd= 1 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

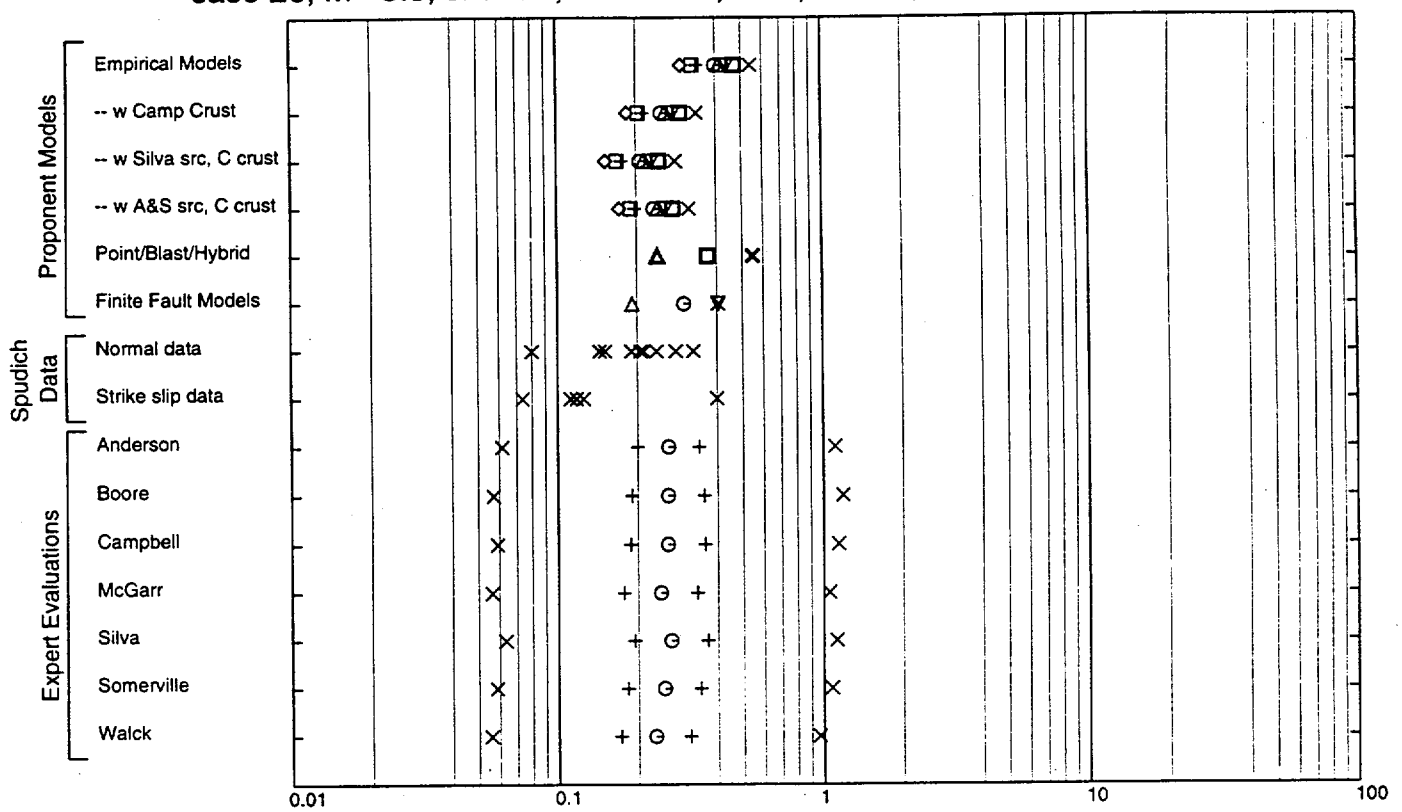
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

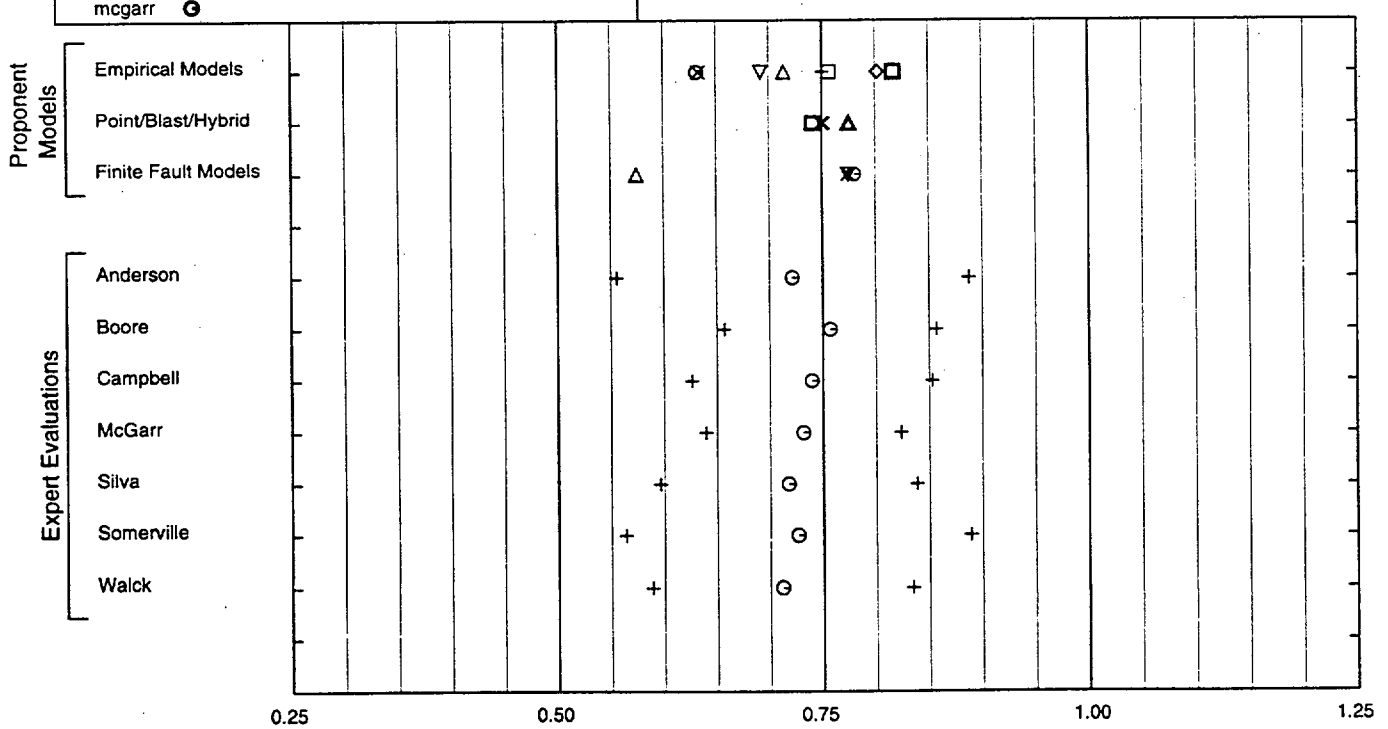
case 26, M= 5.8, shallow, xd= 5 km, HW, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

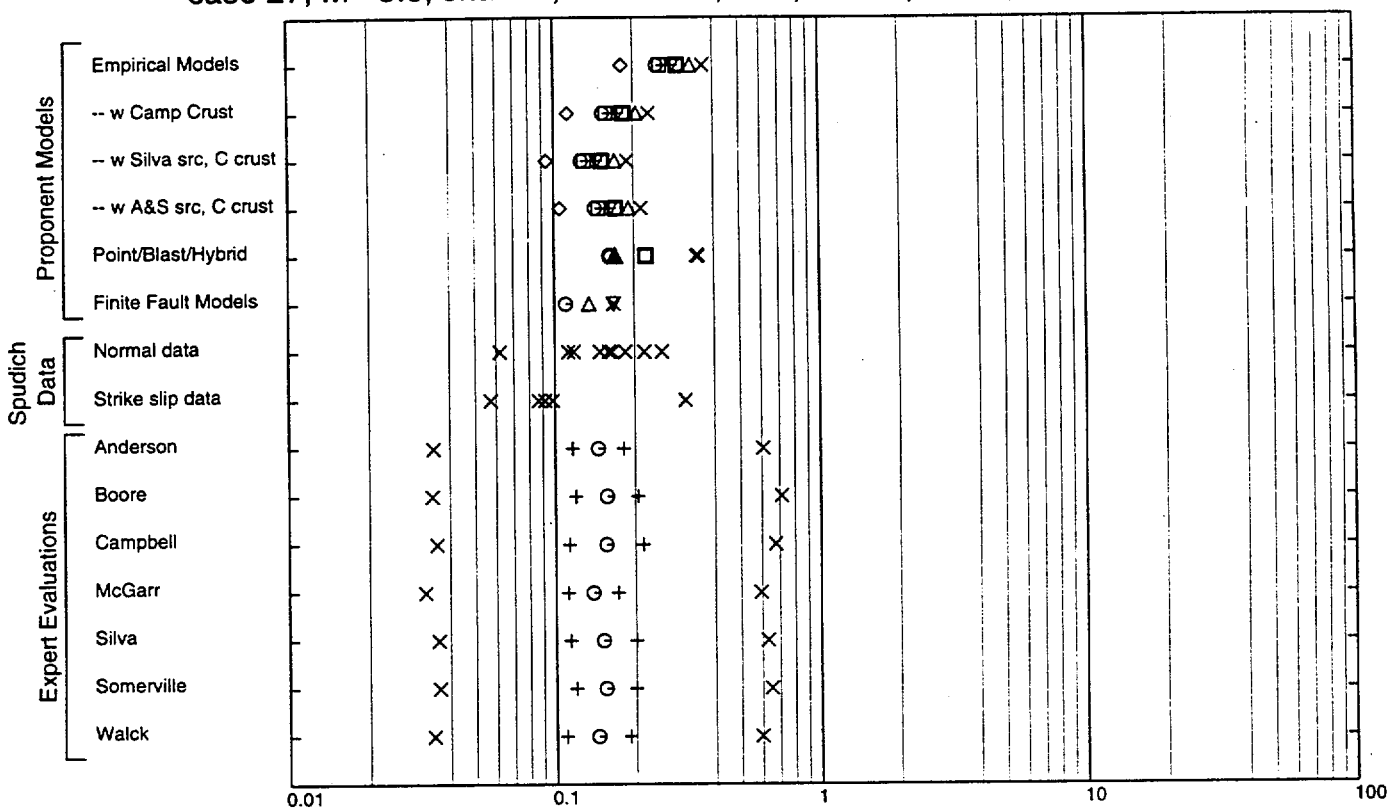
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

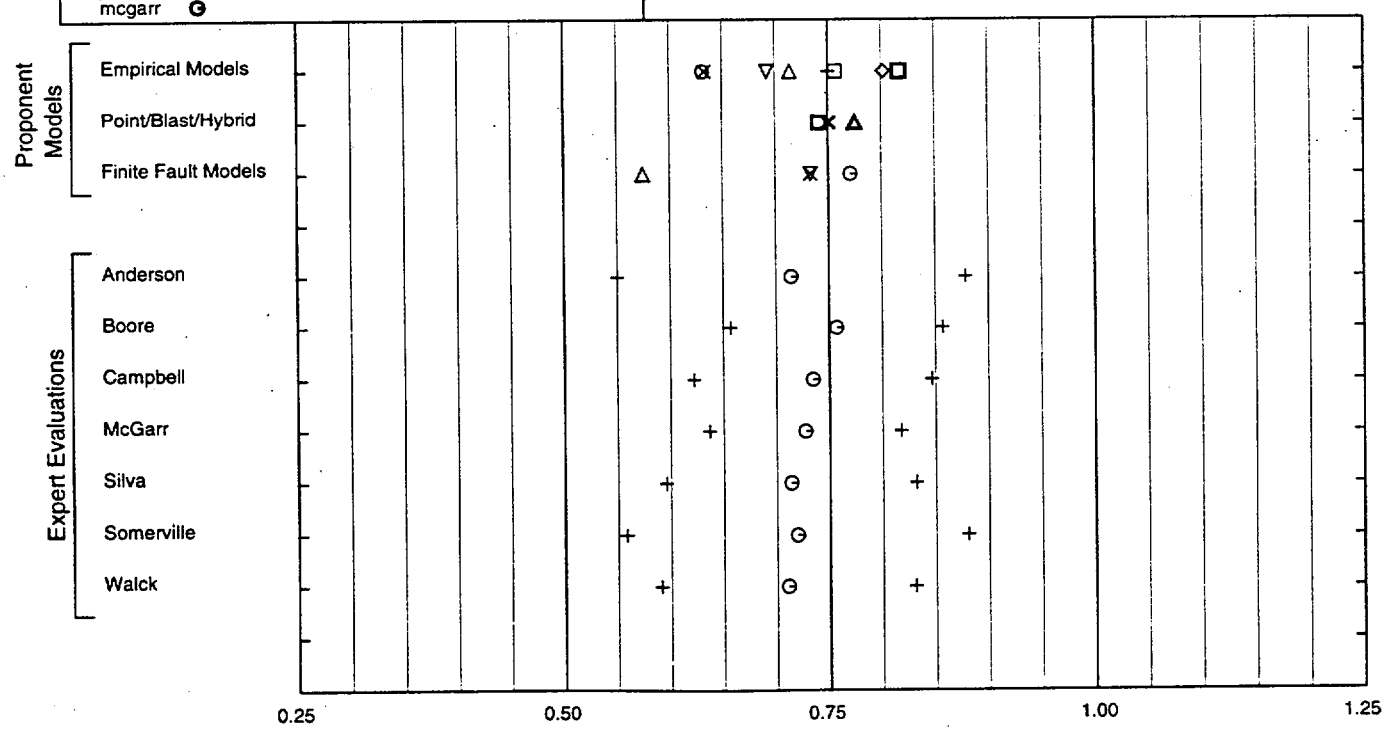
case 27, M= 5.8, shallow, xd= -5 km, FW, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

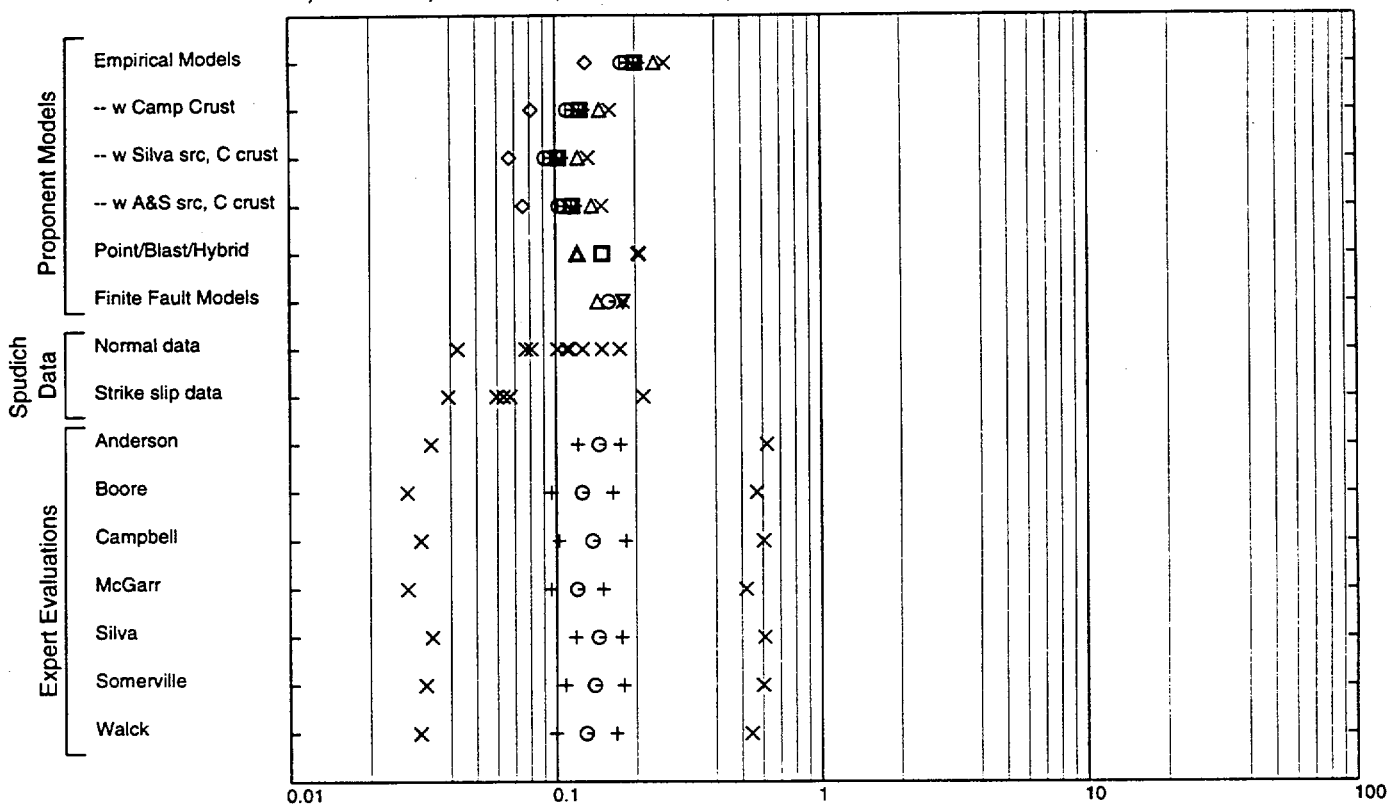
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

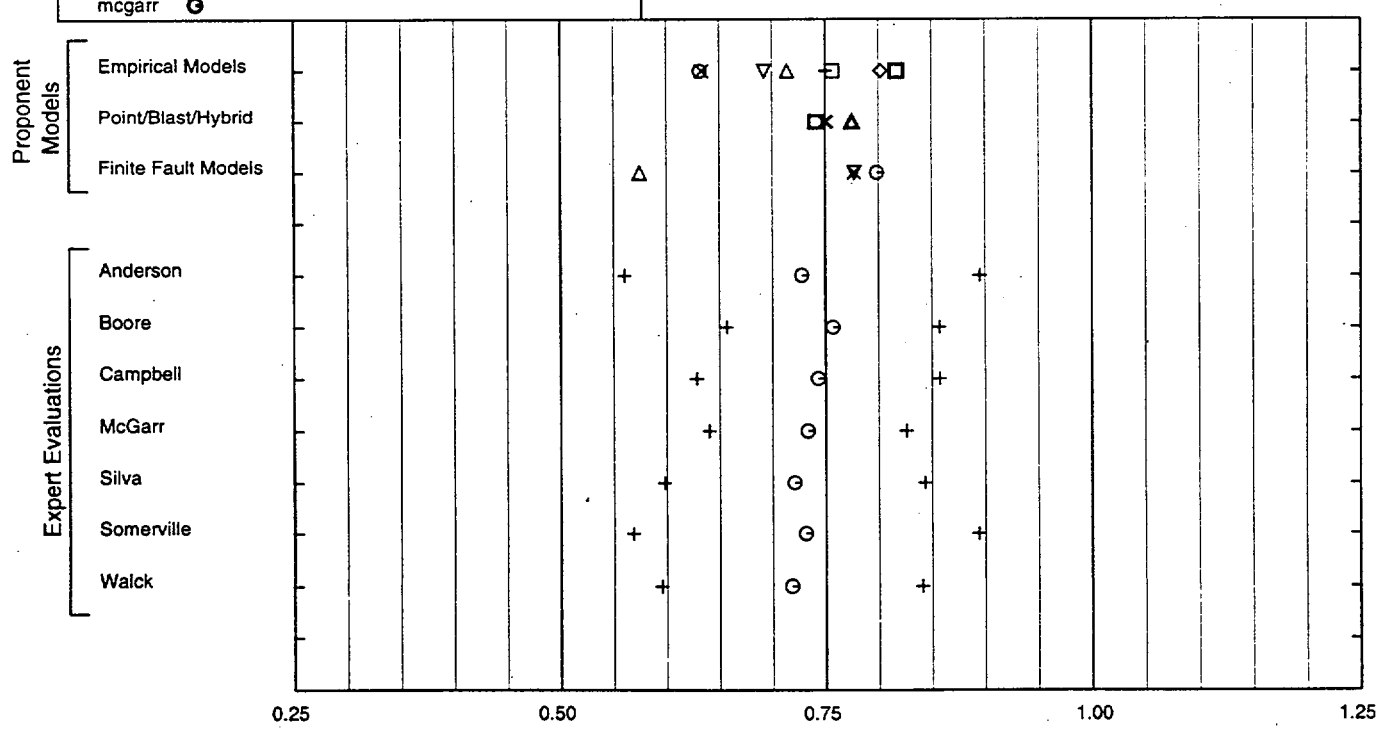
case 28, M= 5.8, shallow, xd= 10 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

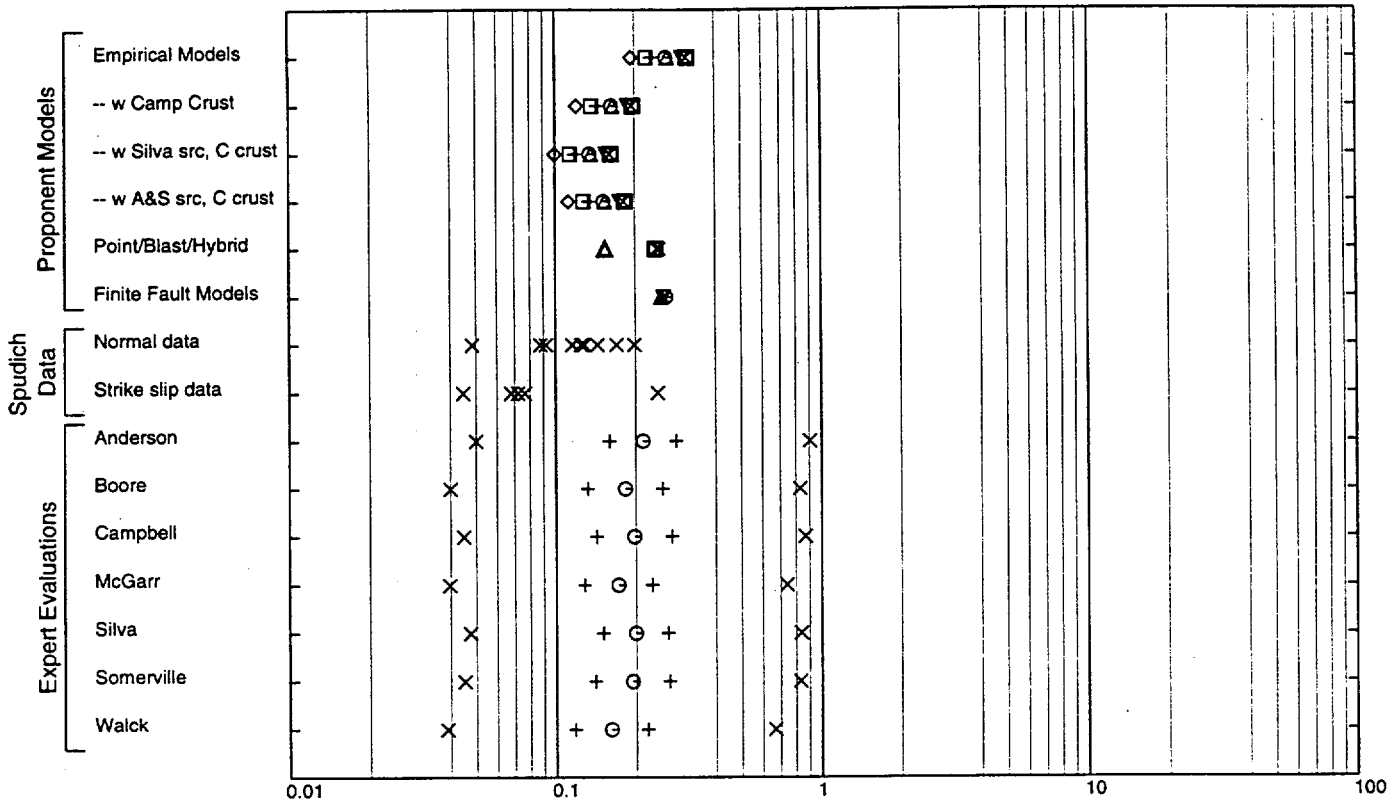
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

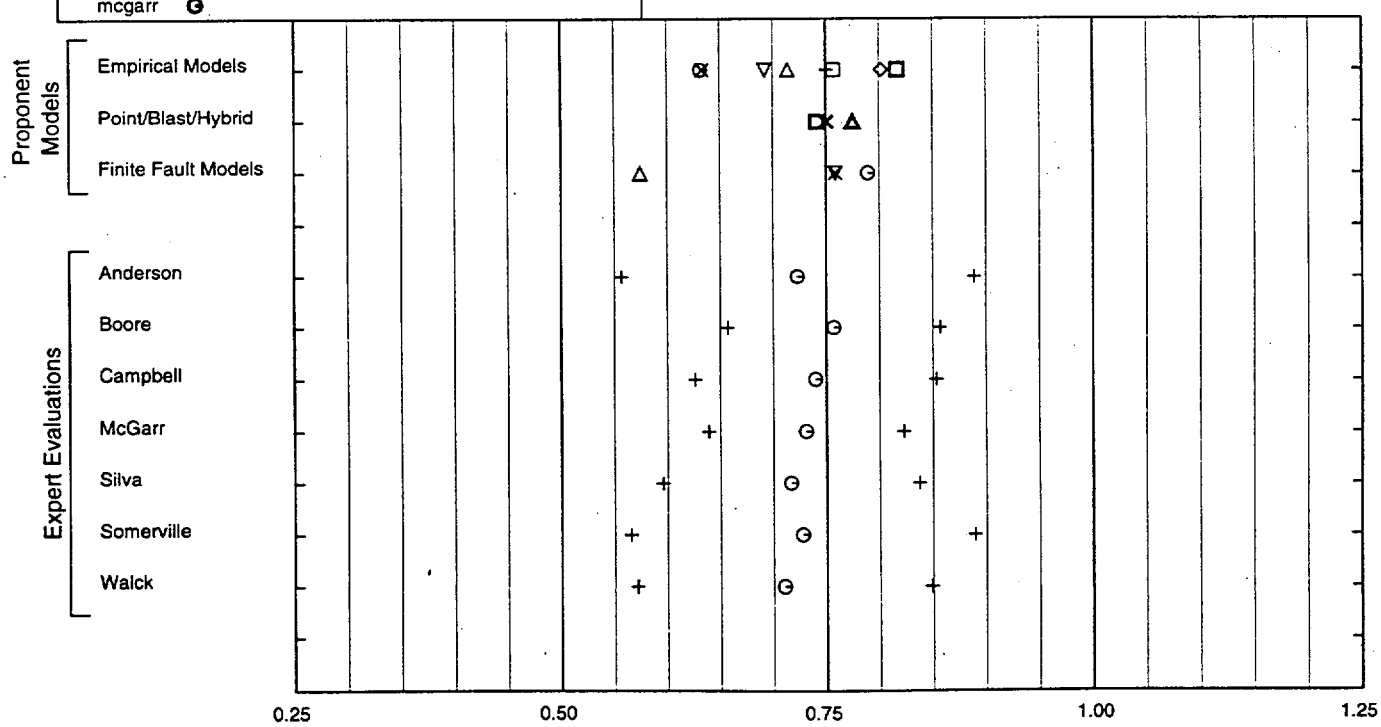
case 29, M= 5.8, shallow, xd= 10 km, HW, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

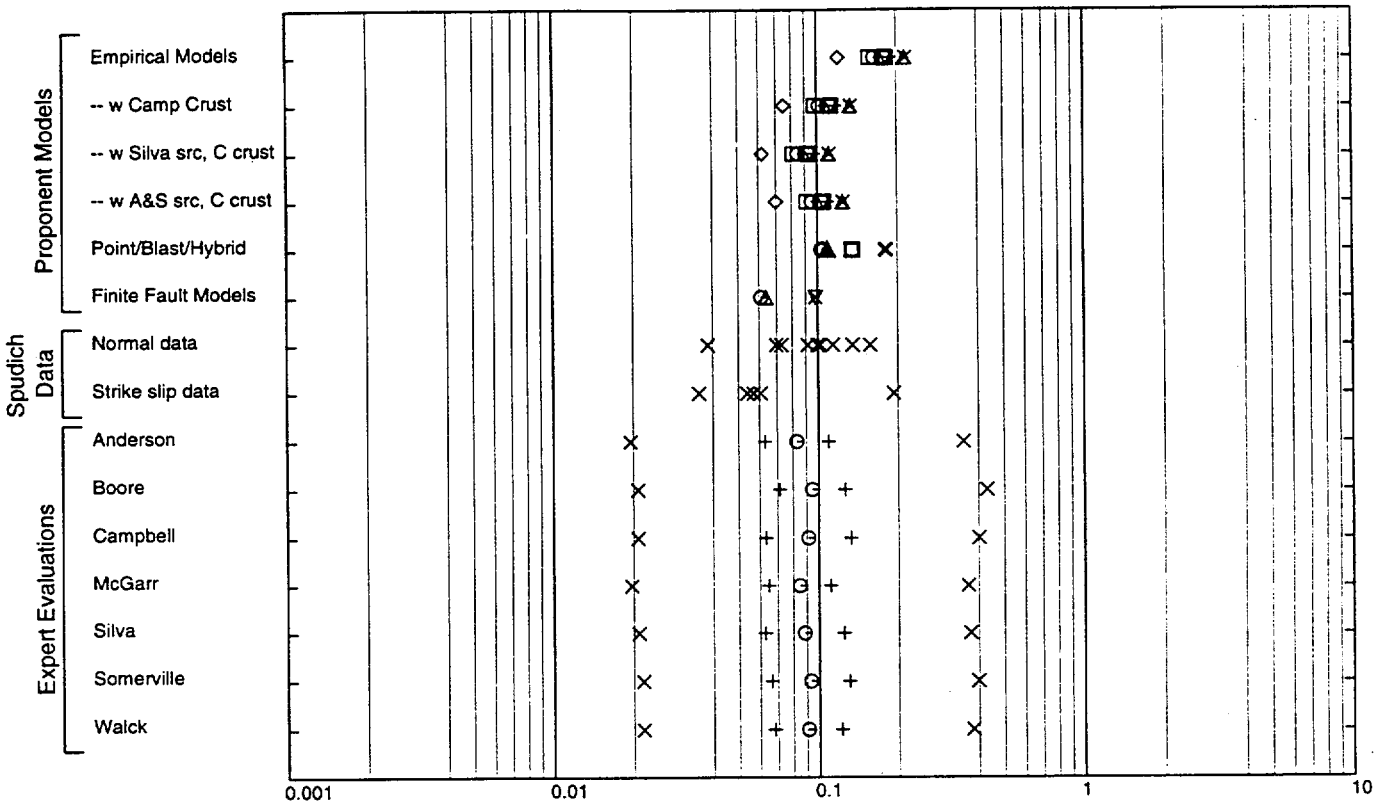
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

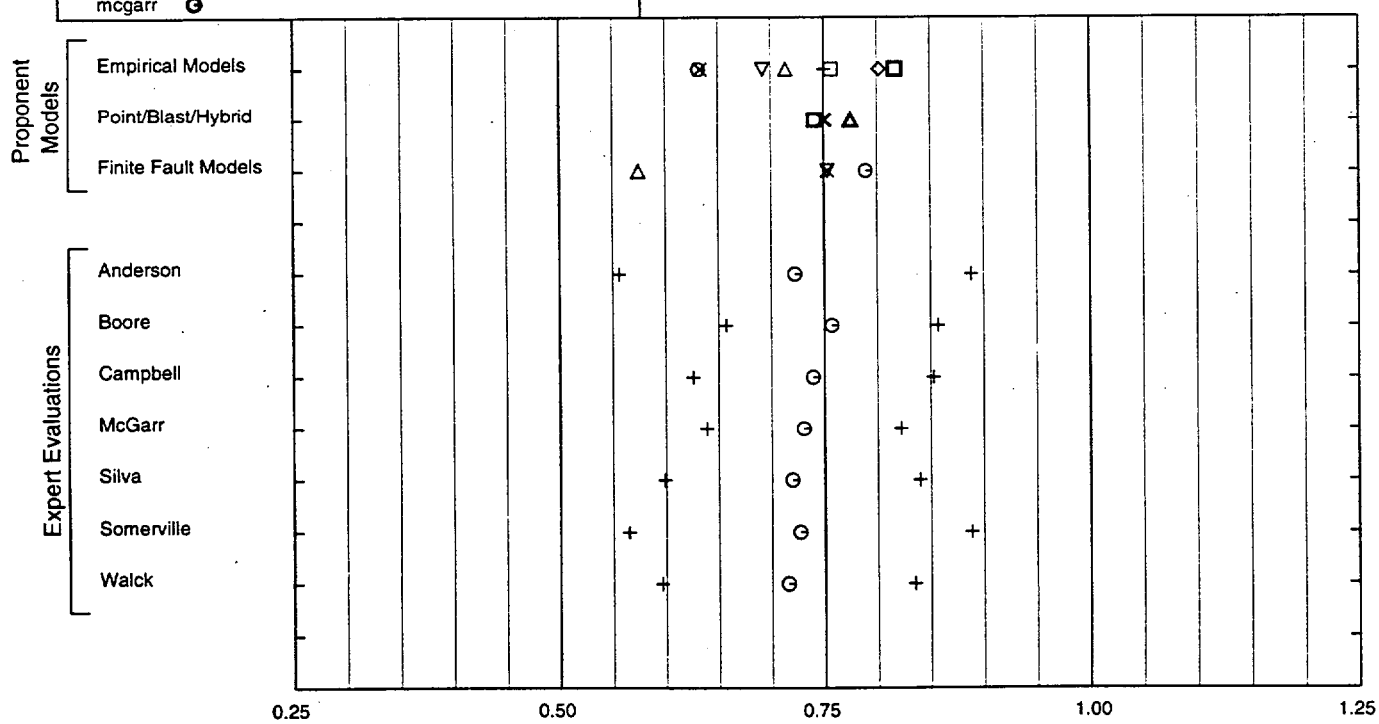
case 30, M= 5.8, shallow, xd=-10 km, FW, 2 Hz, HOR, 6/5/97, Rev 1



LEGEND

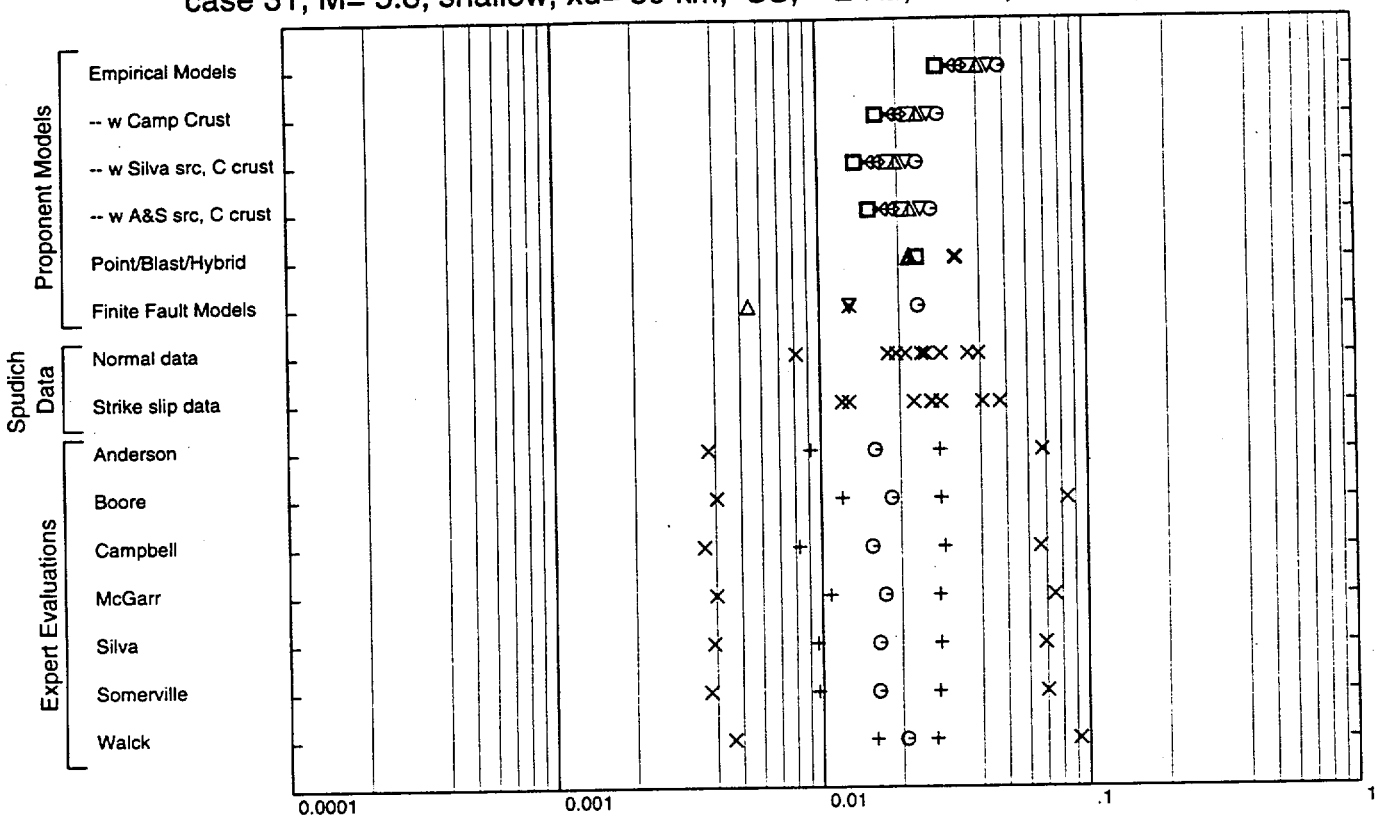
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

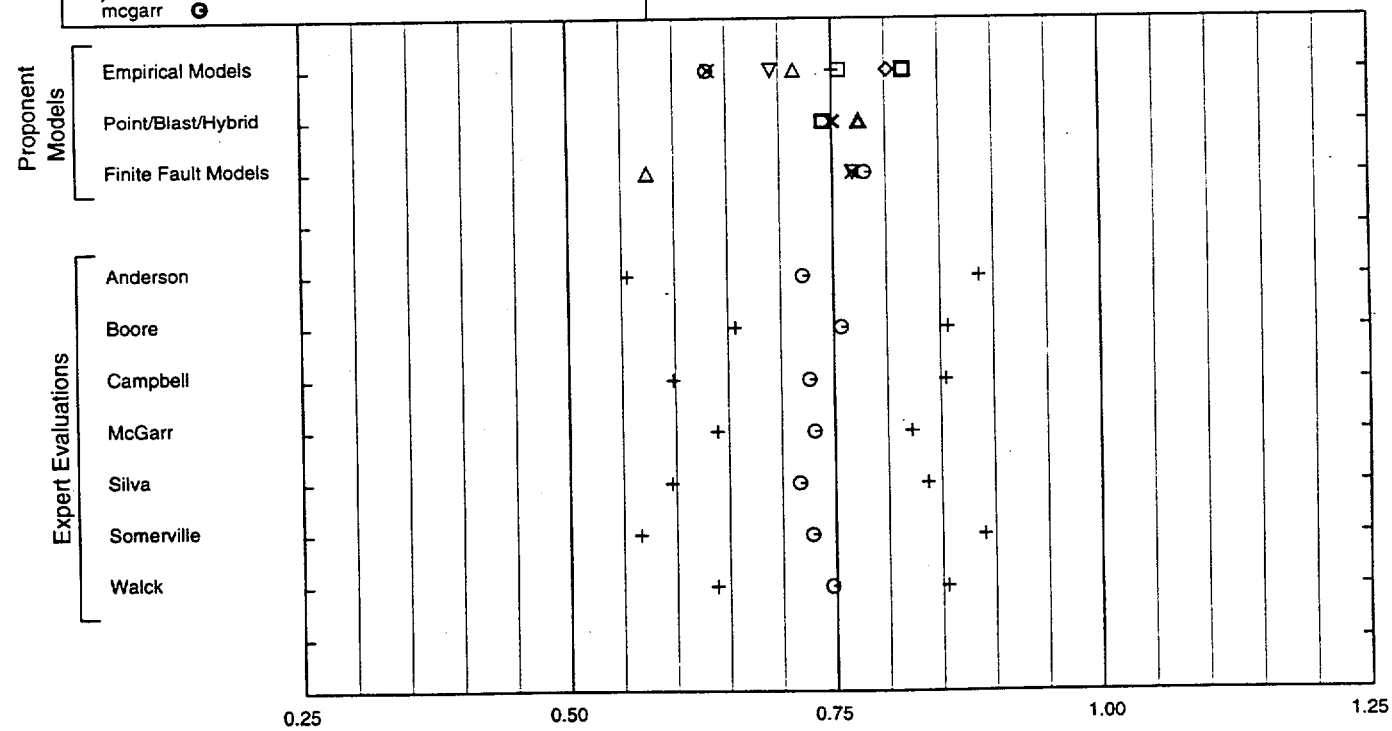
case 31, M= 5.8, shallow, xd= 50 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

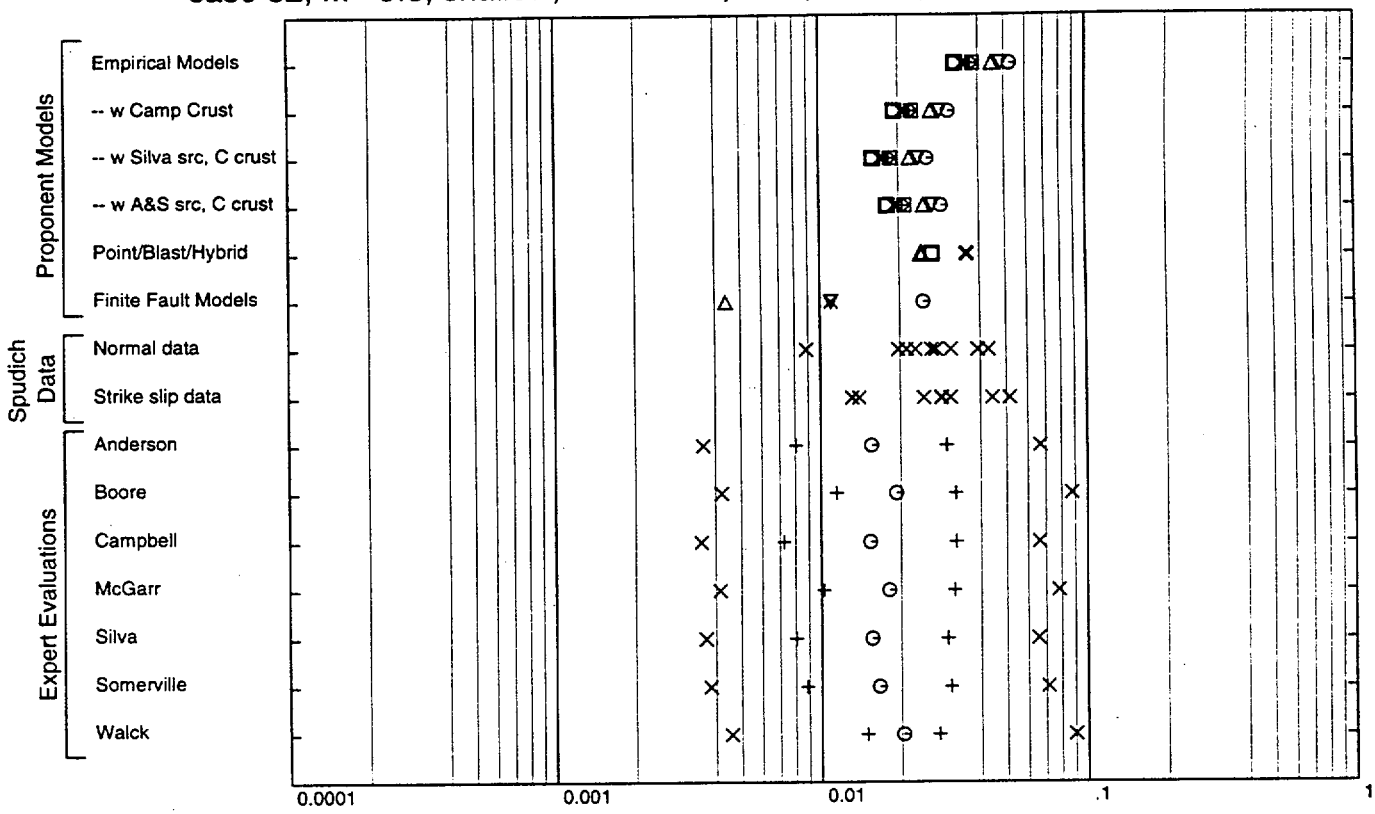
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

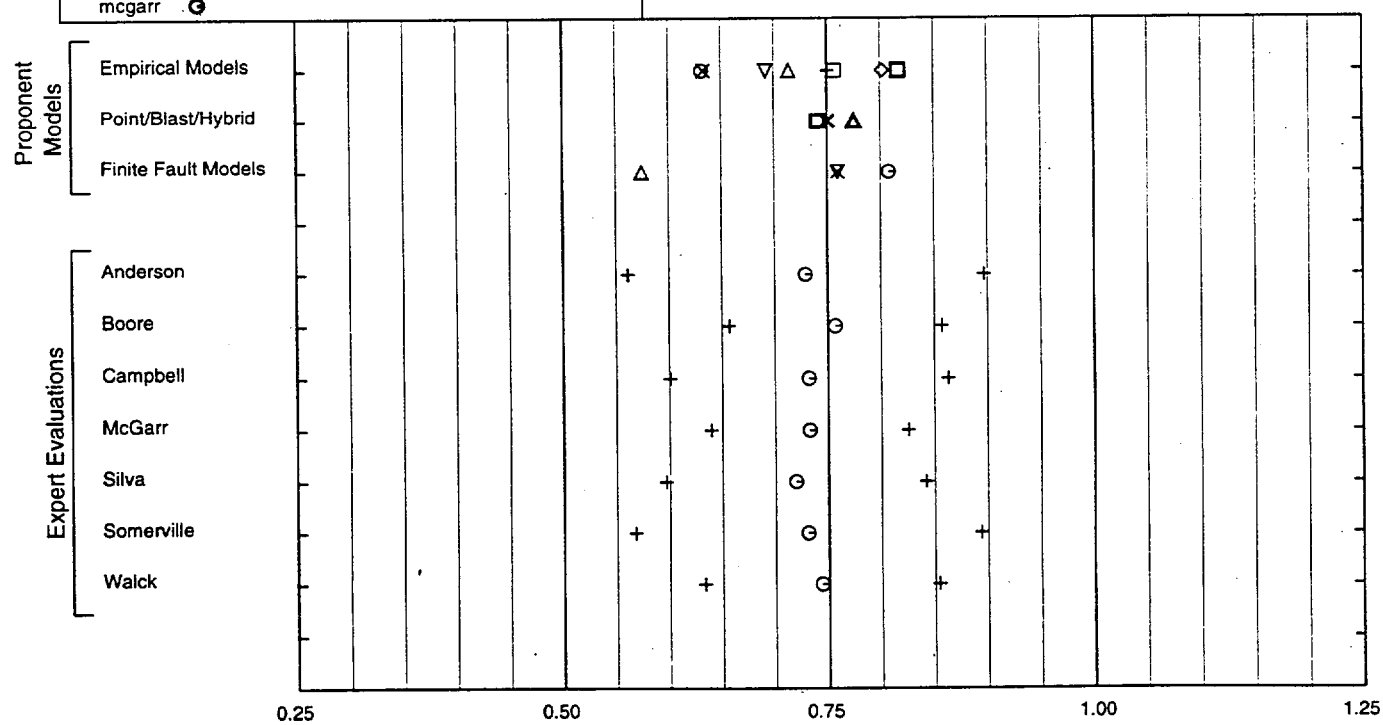
case 32, M= 5.8, shallow, xd= 50 km, HW, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

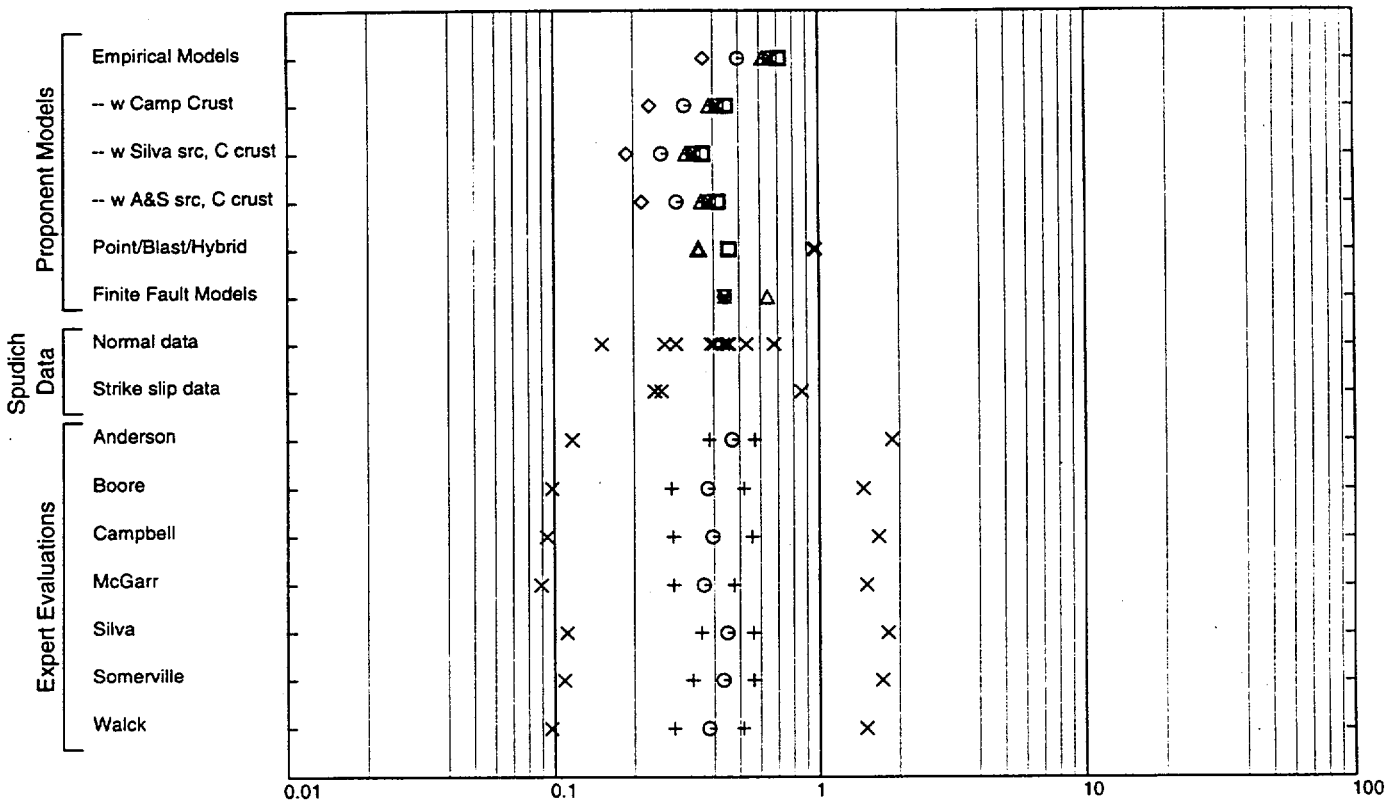
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

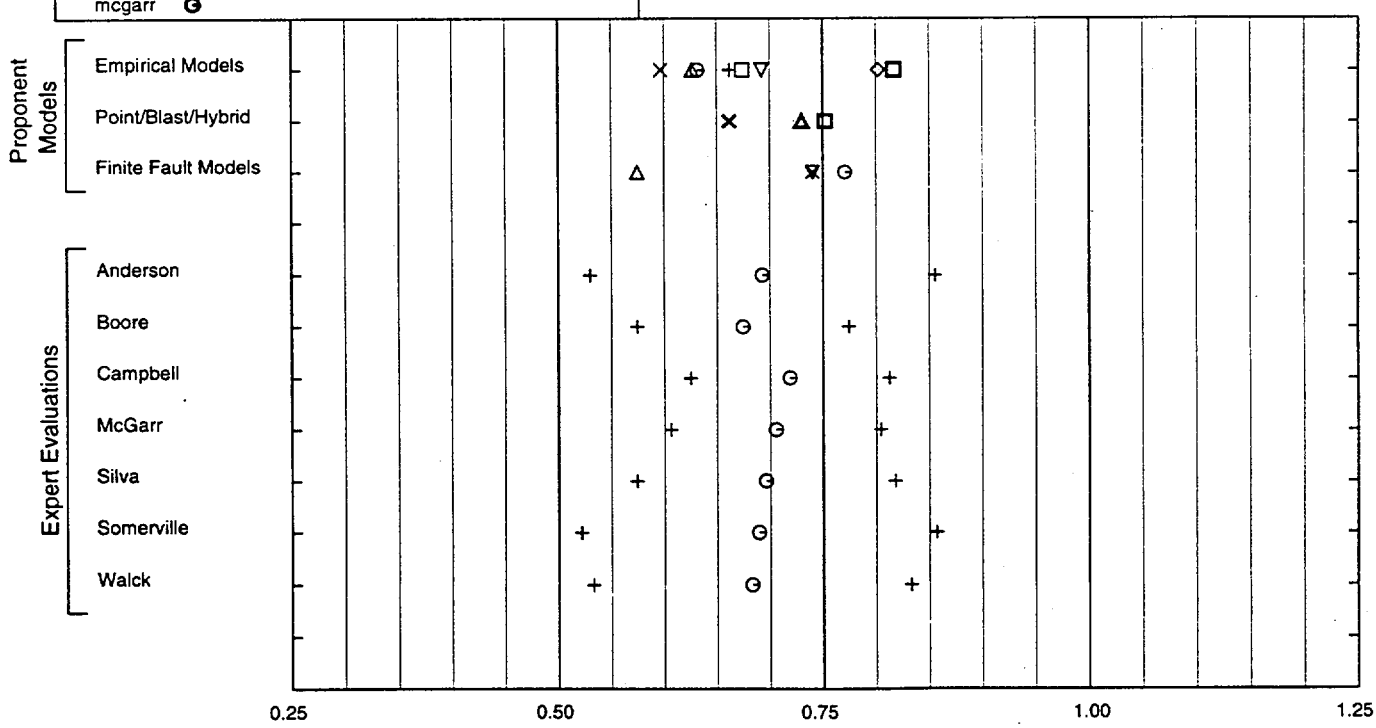
case 33, M= 6.5, shallow, xd= 5 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



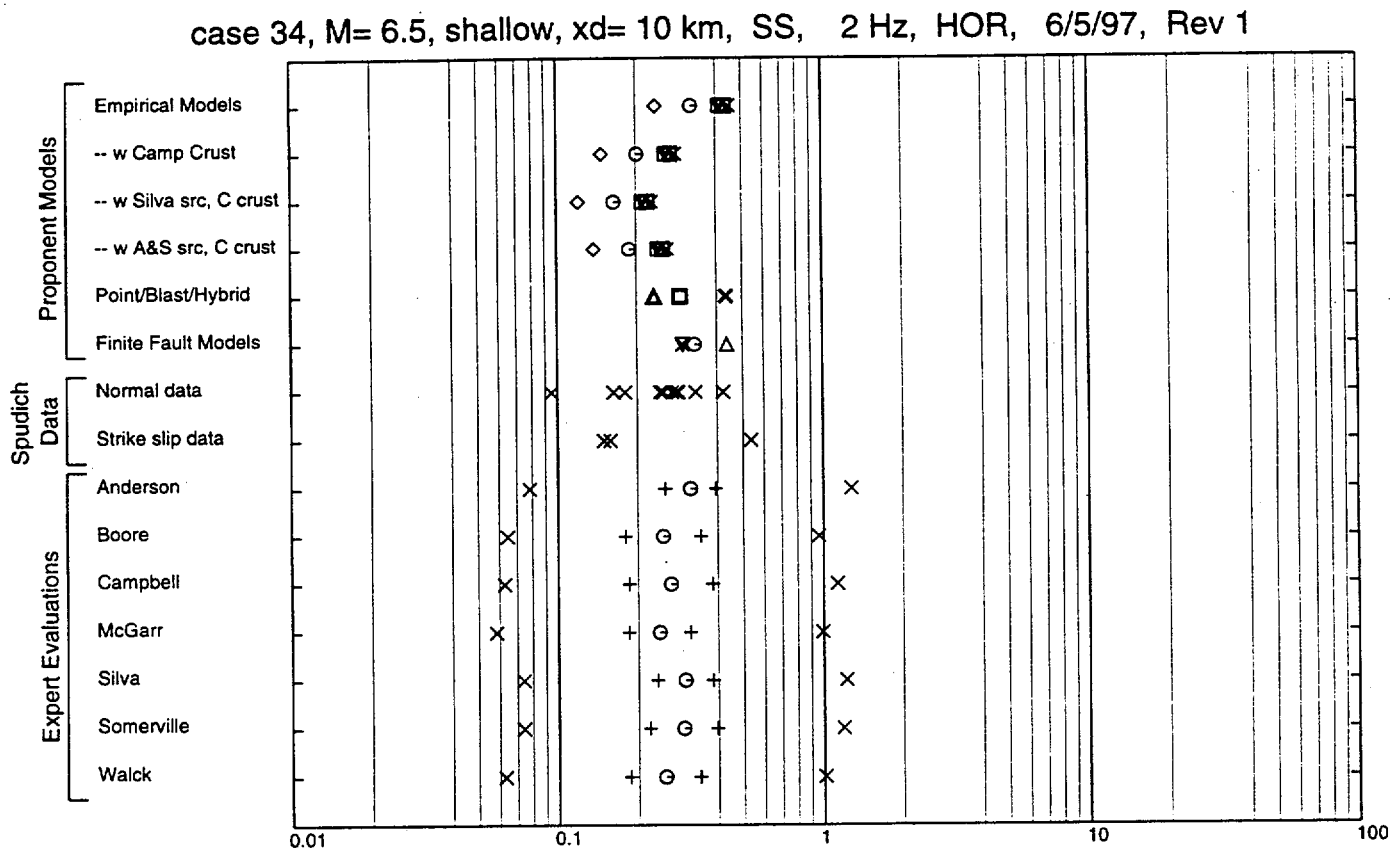
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

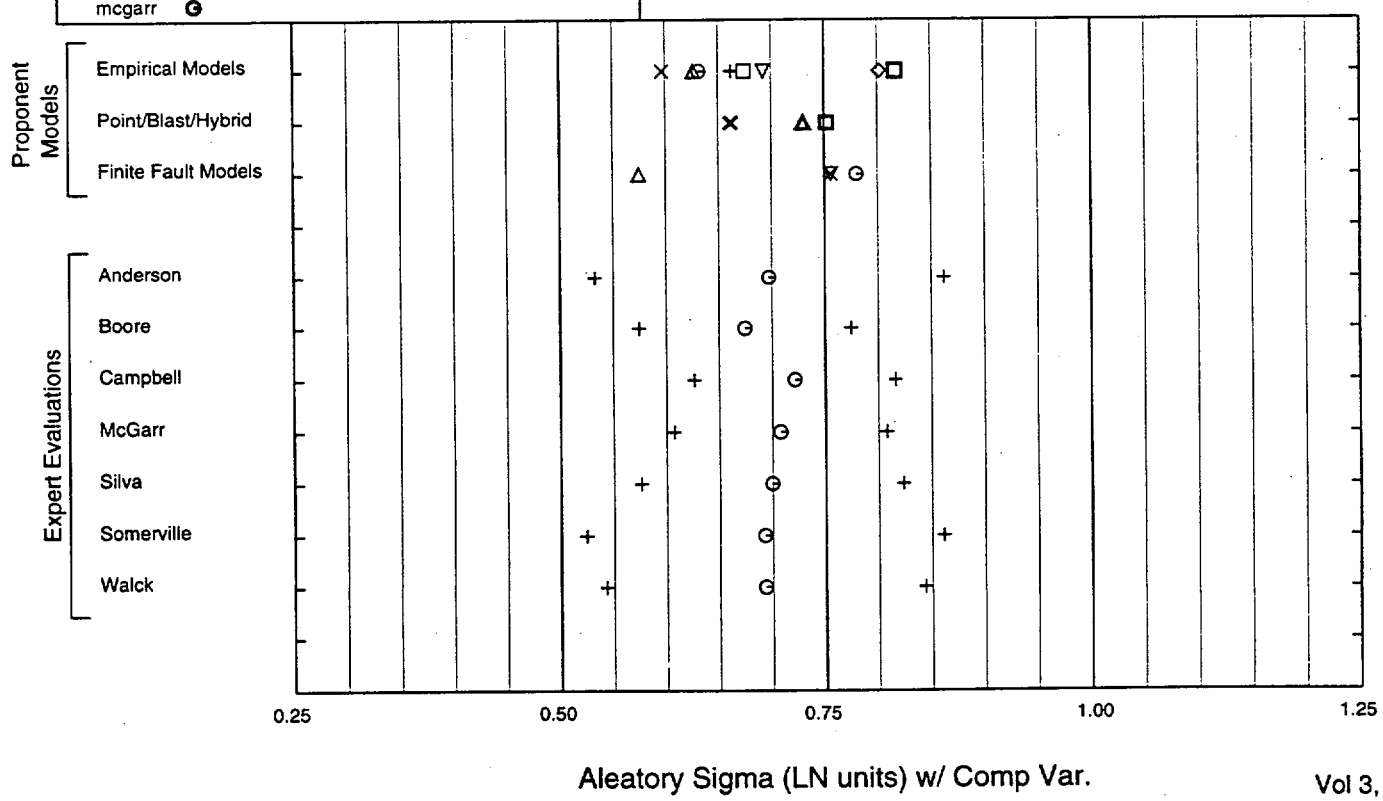


Aleatory Sigma (LN units) w/ Comp Var.

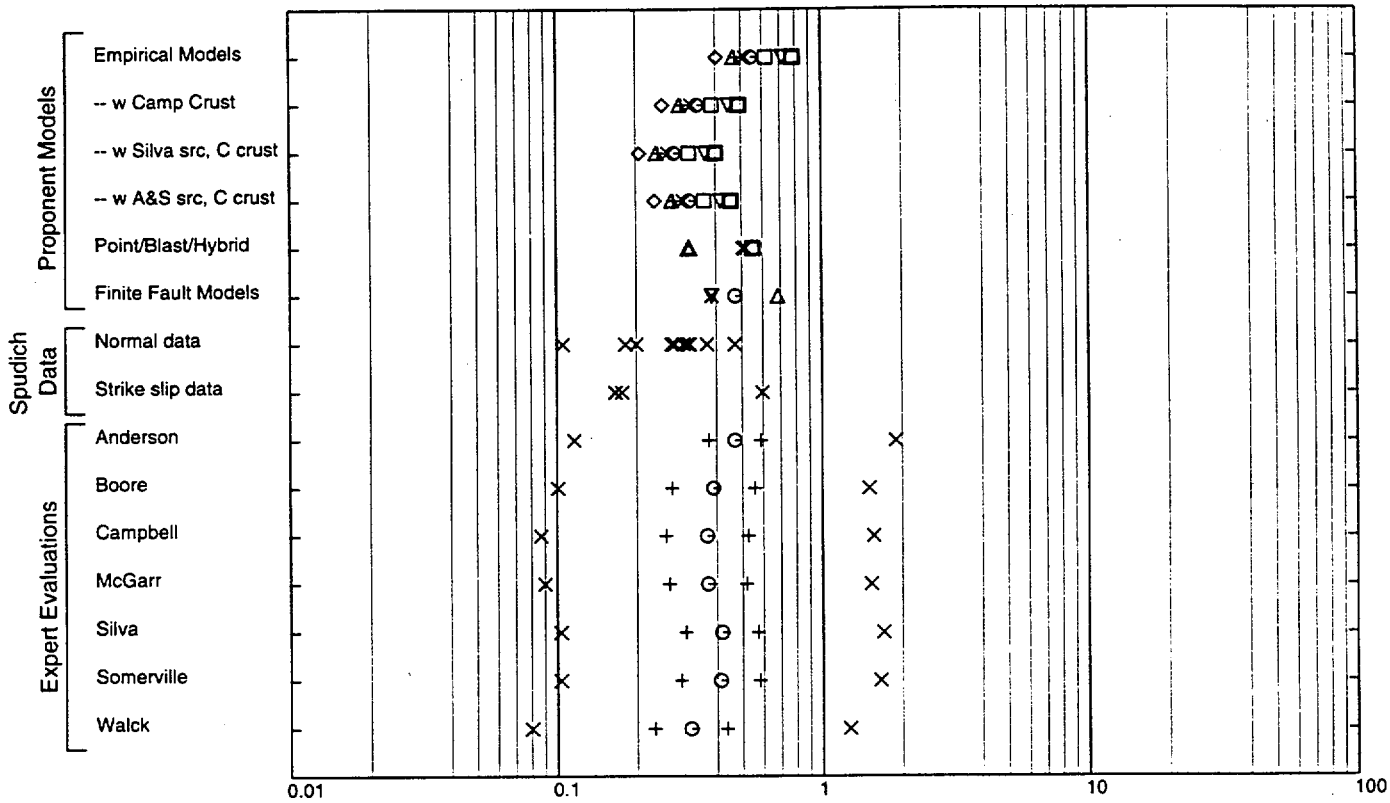


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

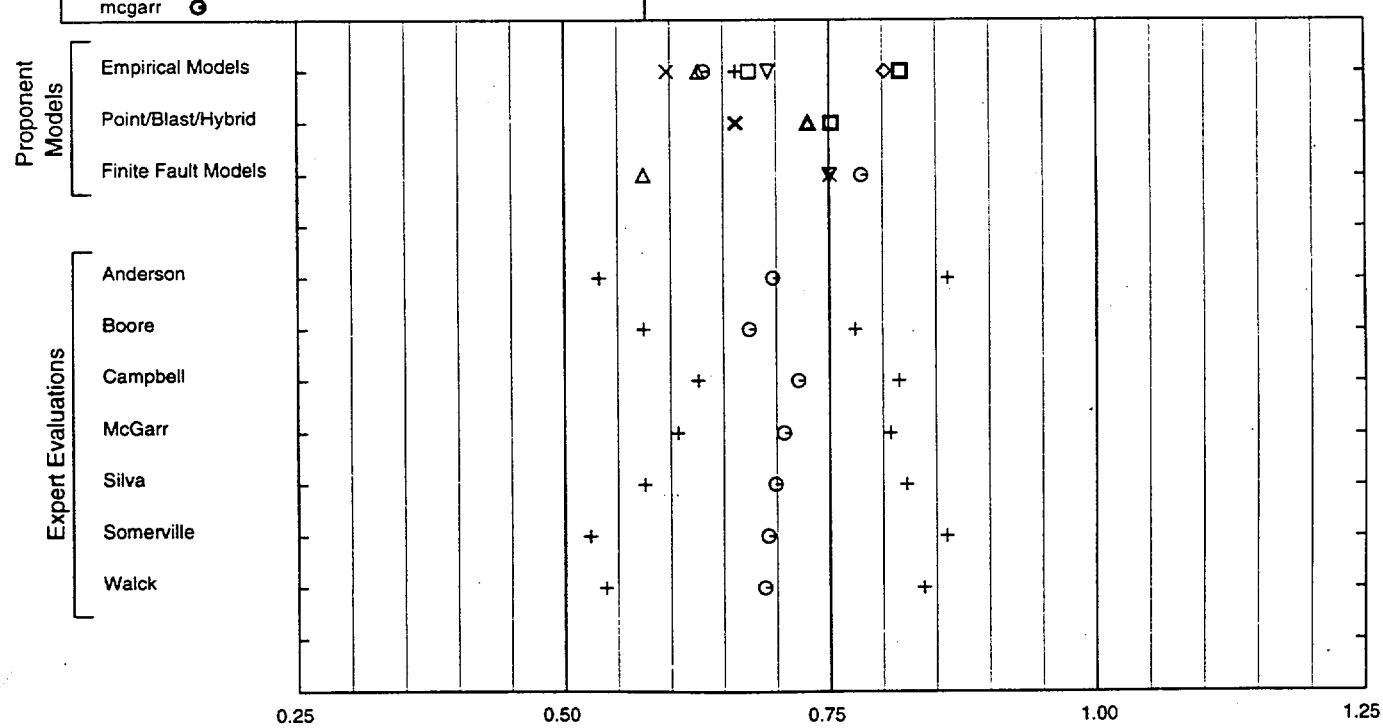


case 35, M= 6.5, shallow, xd= 10 km, HW, 2 Hz, HOR, 6/5/97, Rev 1

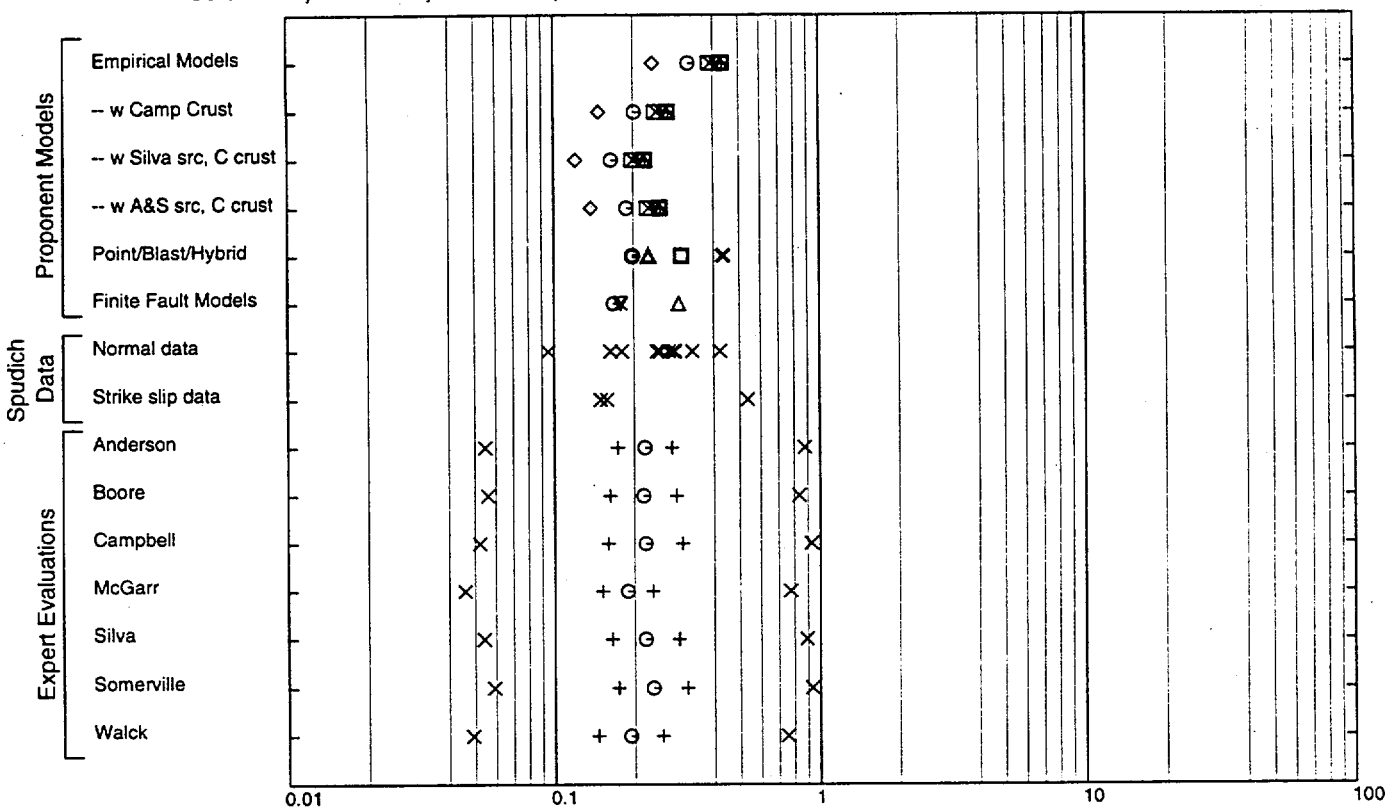


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



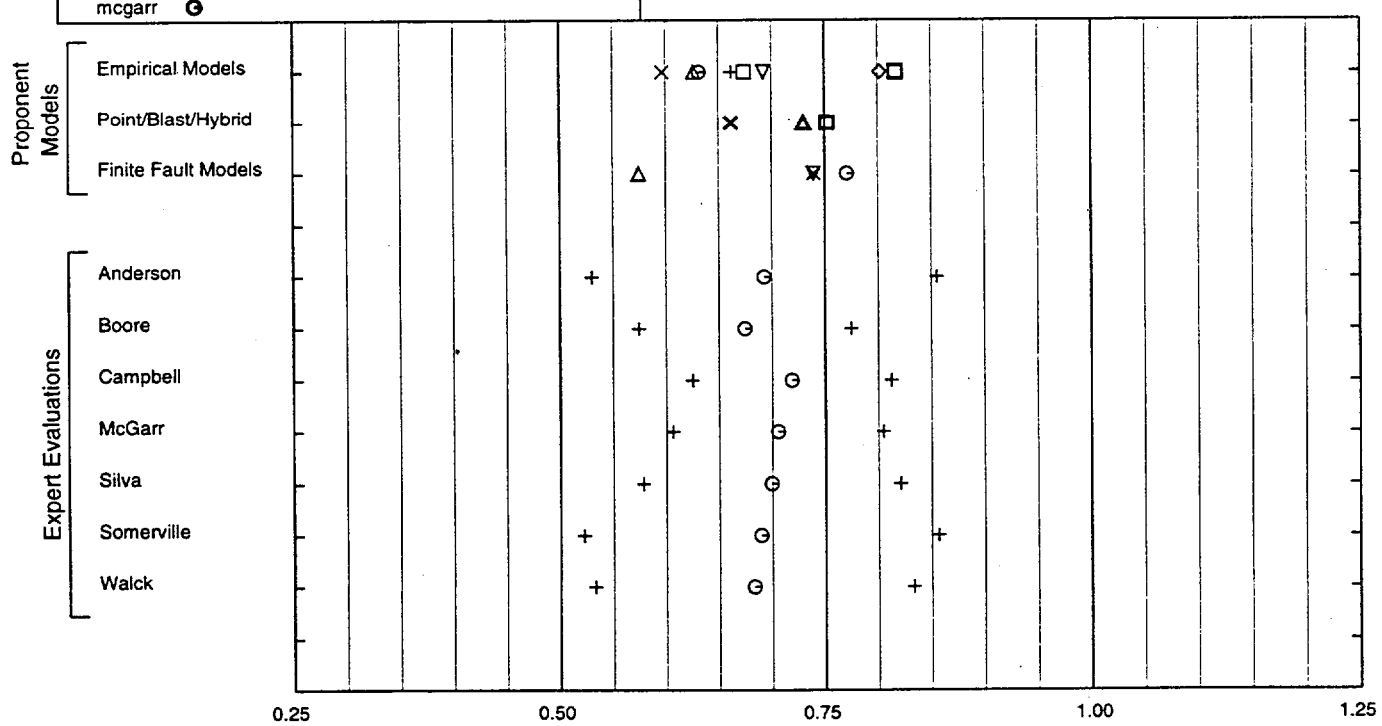
case 36, M= 6.5, shallow, xd=-10 km, FW, 2 Hz, HOR, 6/5/97, Rev 1



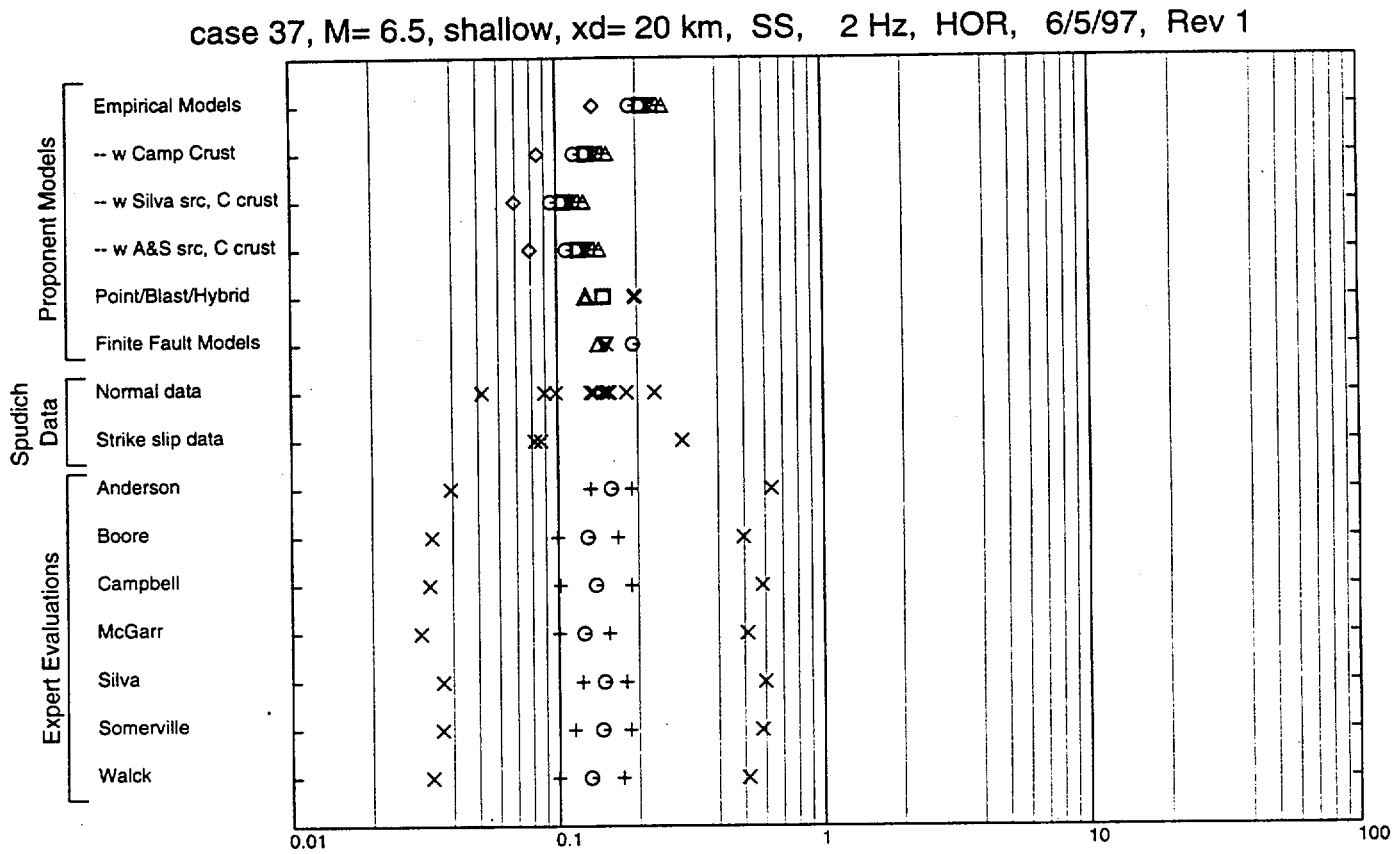
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

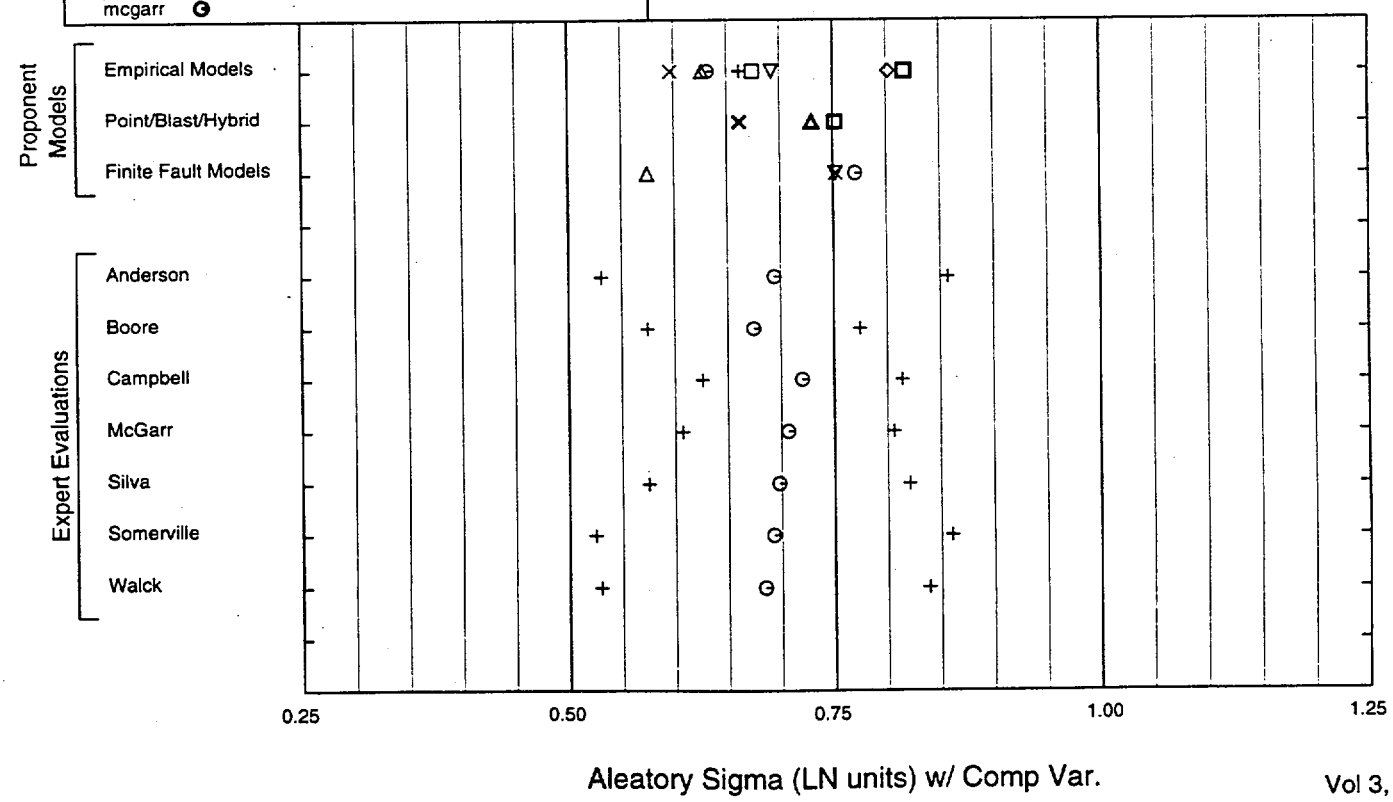


Aleatory Sigma (LN units) w/ Comp Var.

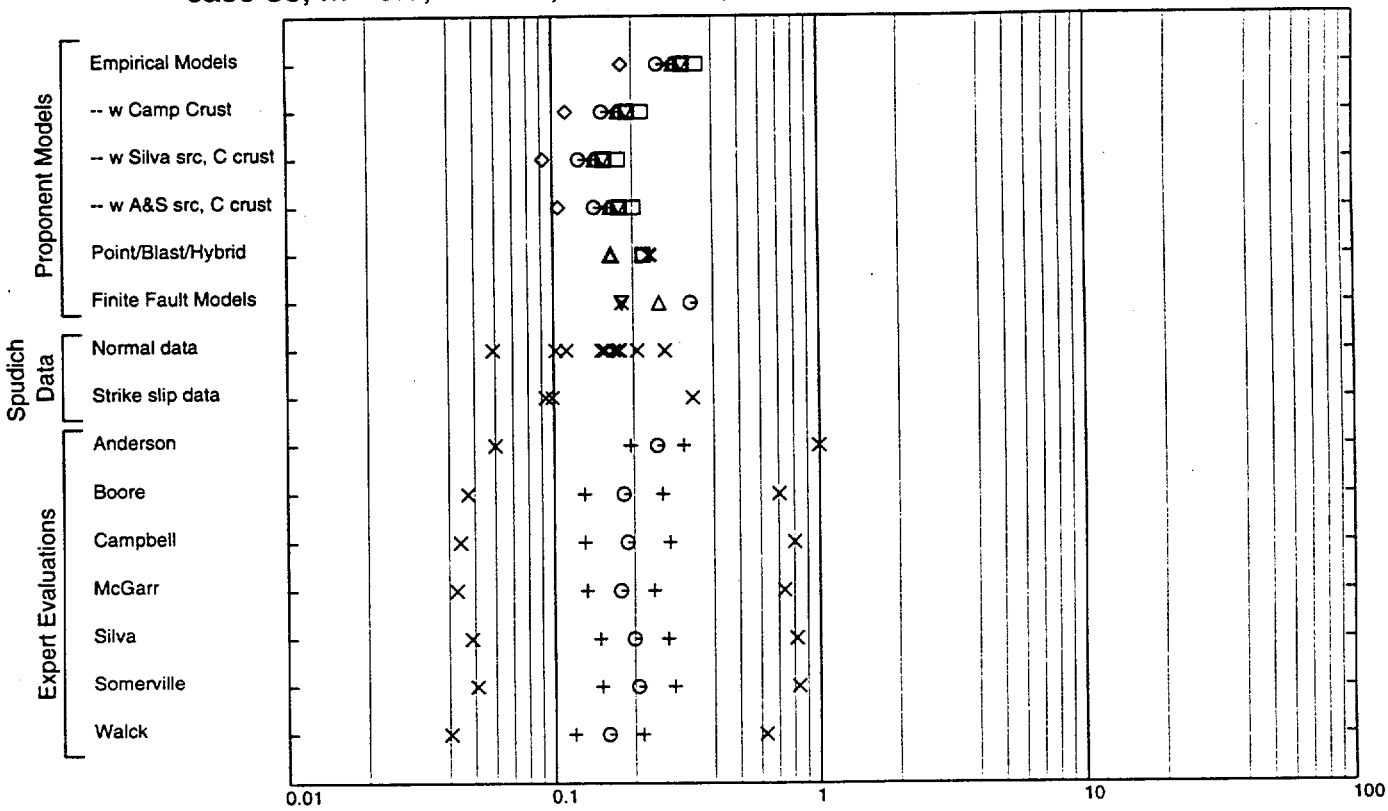


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



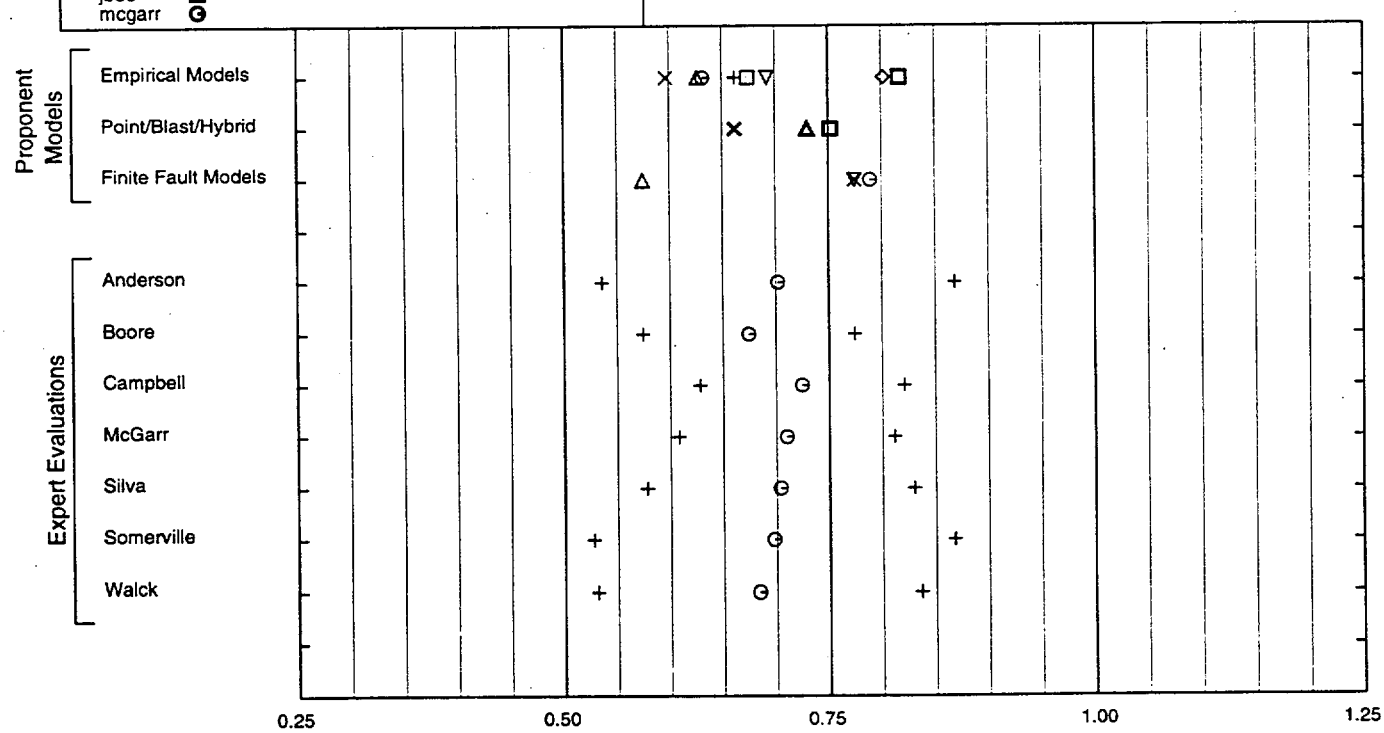
case 38, M= 6.5, shallow, xd= 20 km, HW, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

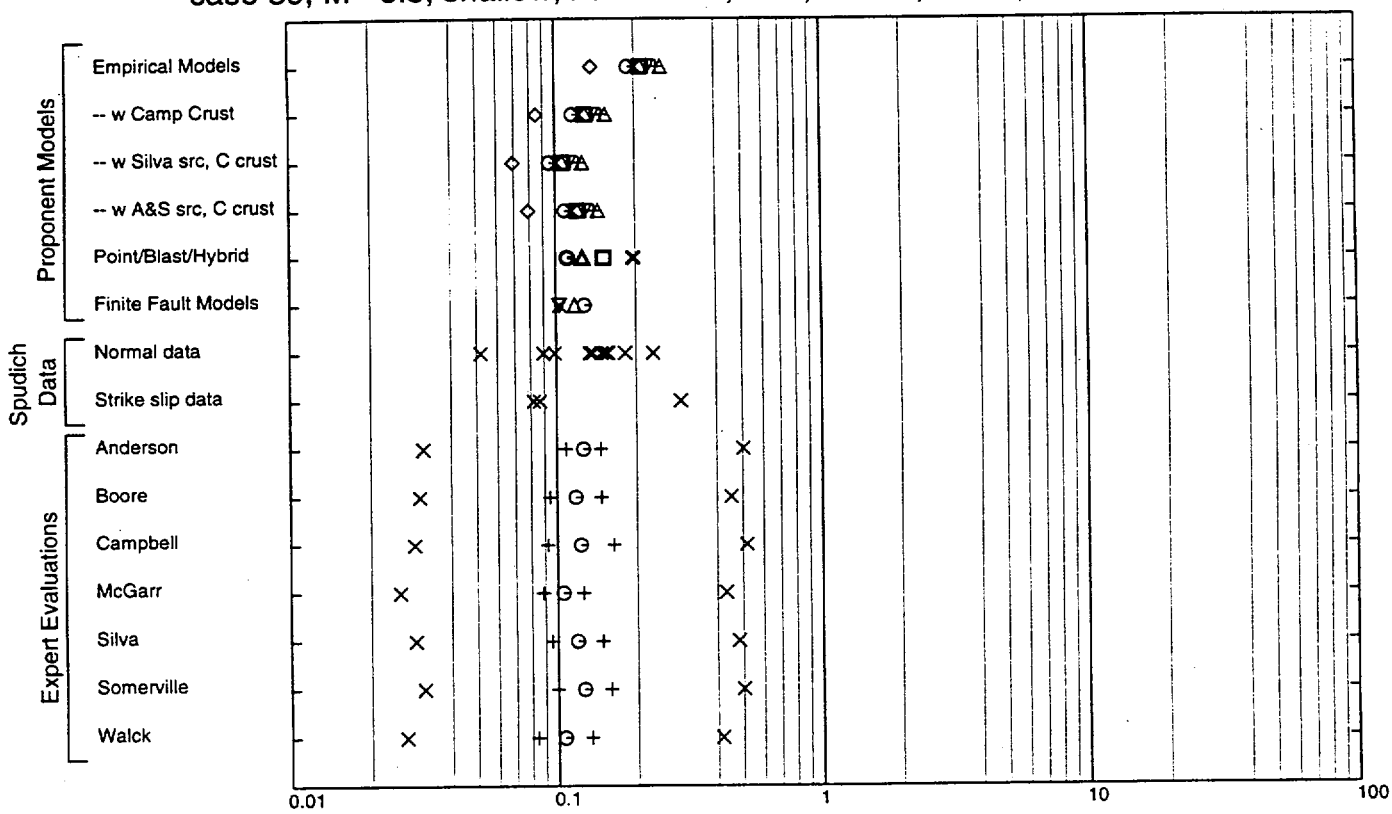
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

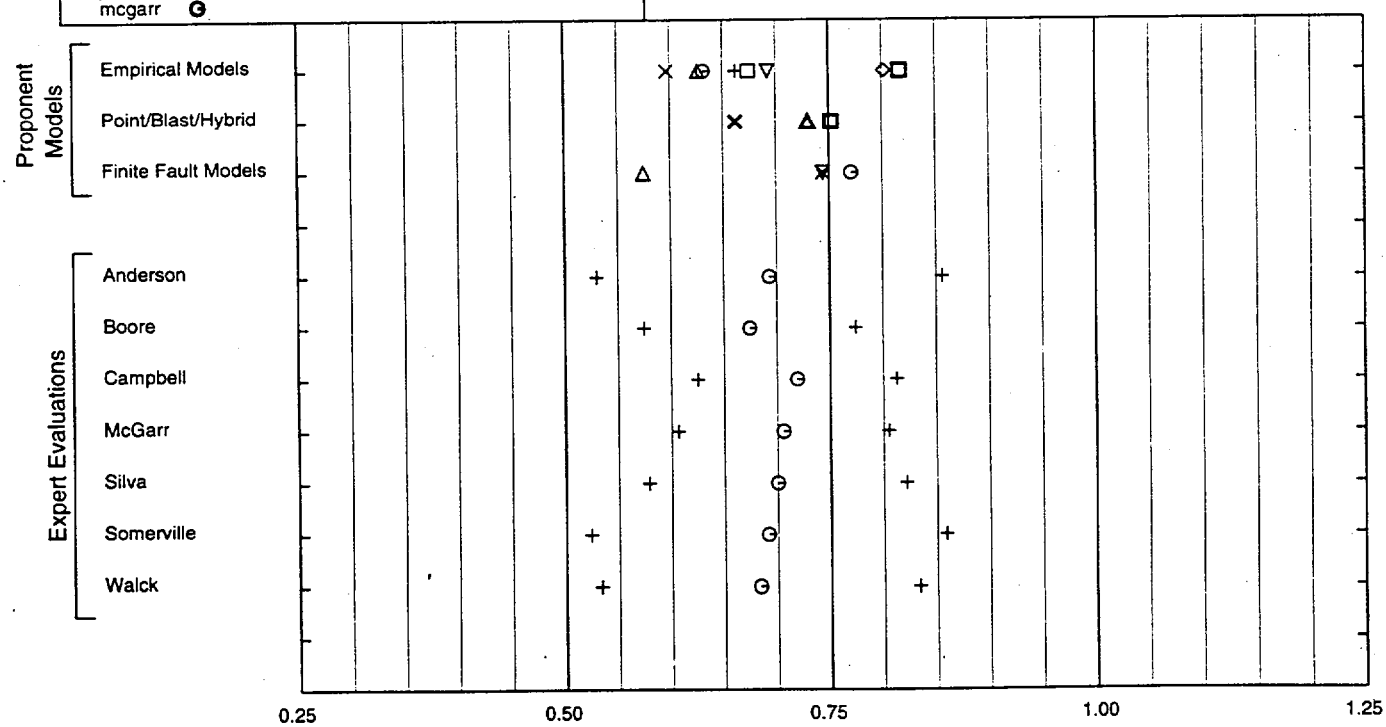
case 39, M= 6.5, shallow, xd=-20 km, FW, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

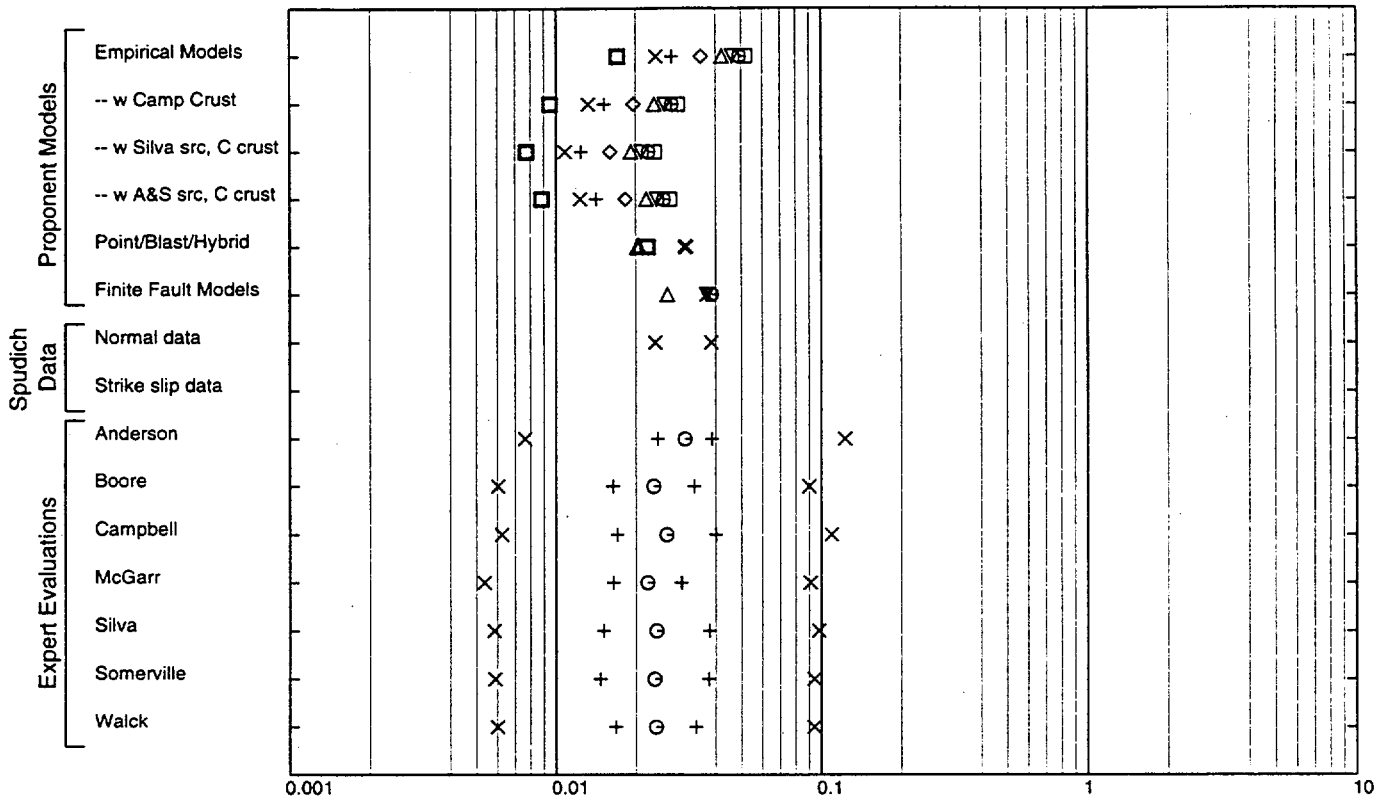
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

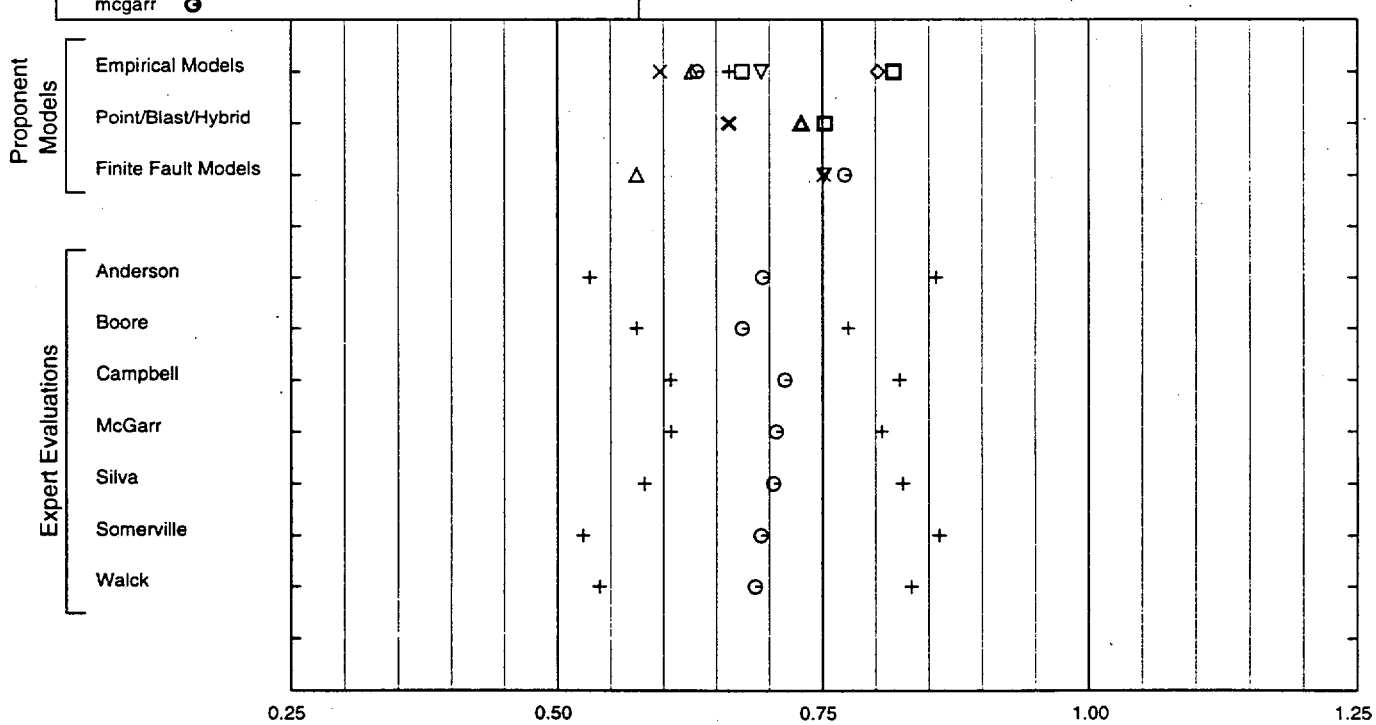
case 40, M= 6.5, shallow, xd=100 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

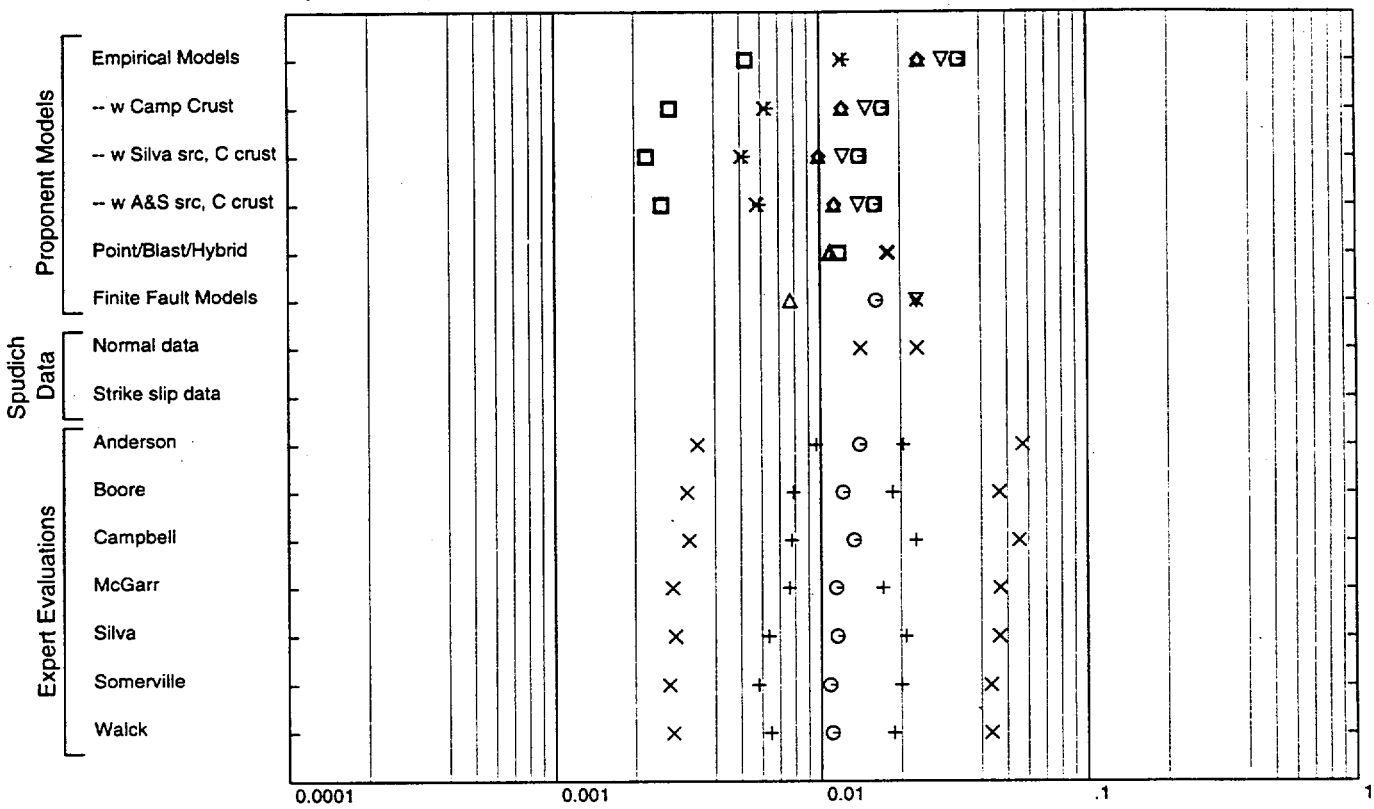
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

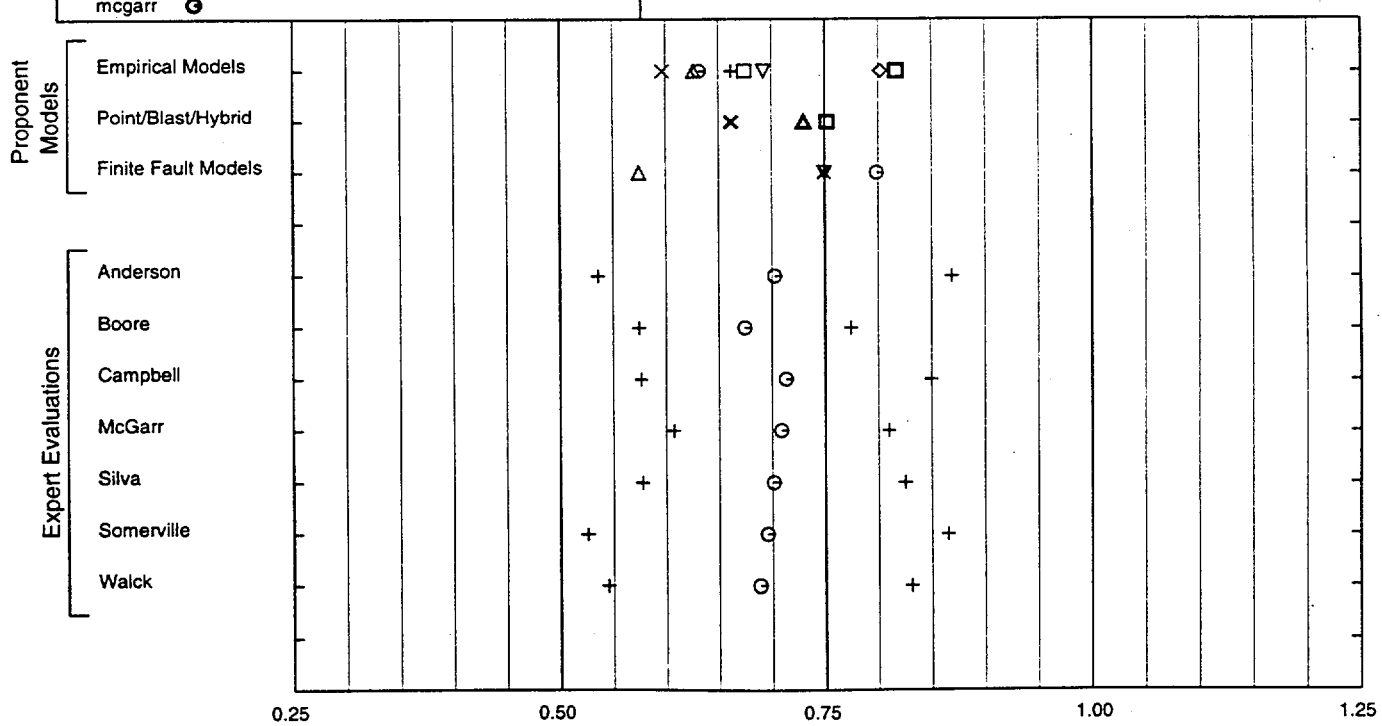
case 41, M= 6.5, shallow, xd=160 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

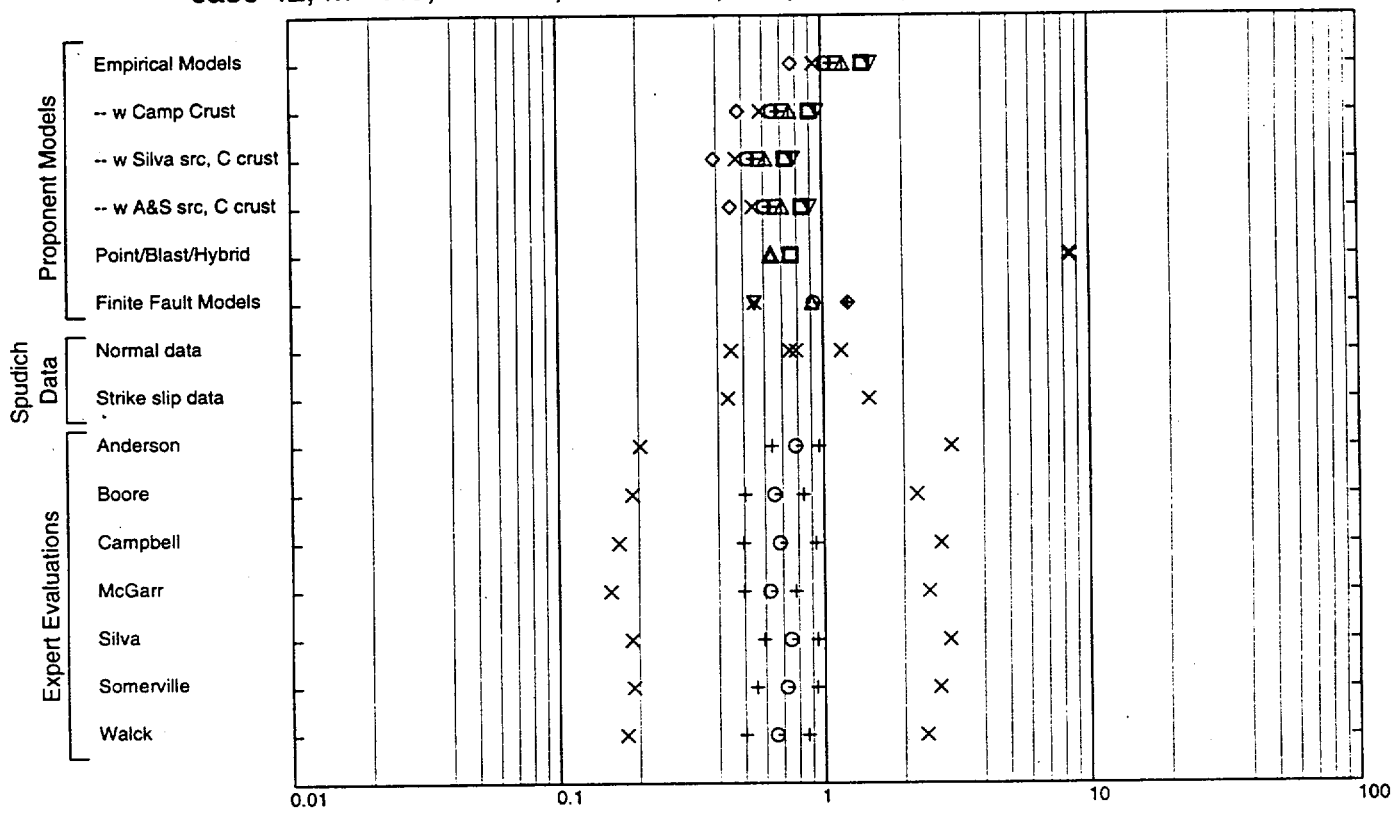
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

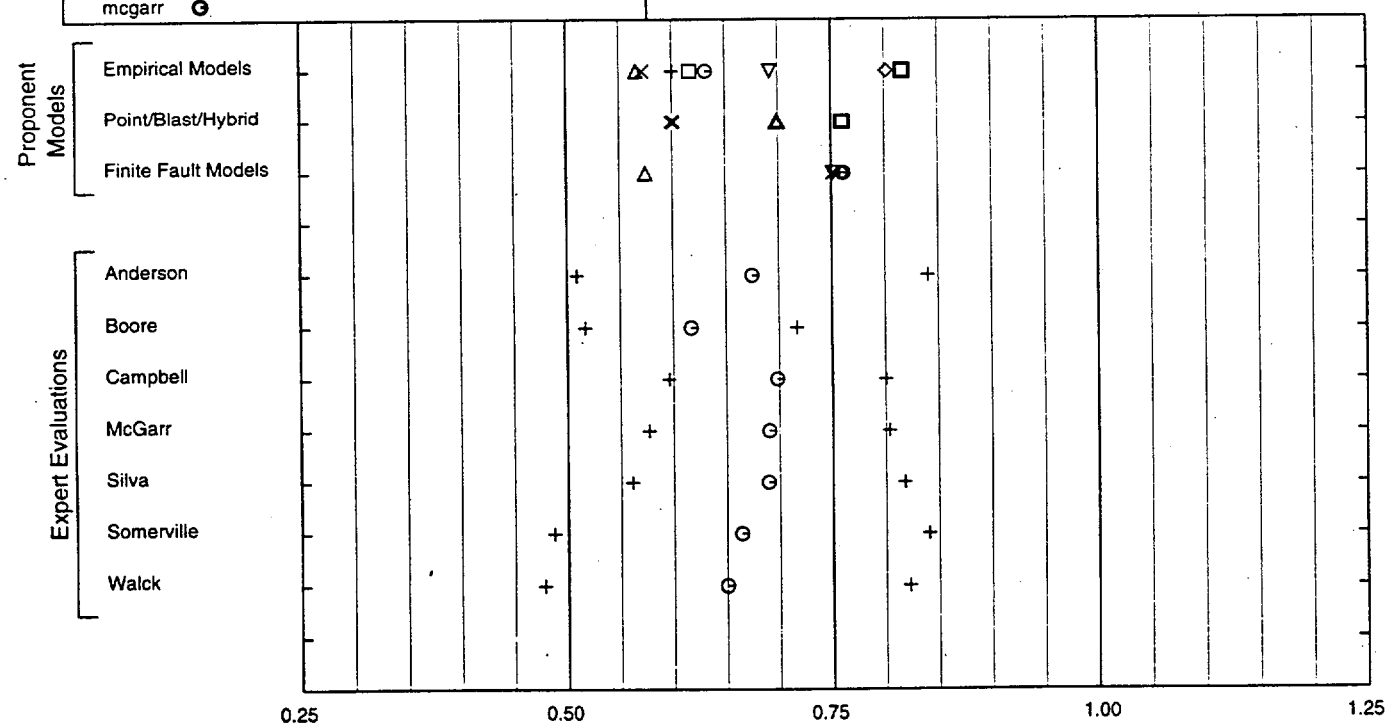
case 42, M= 7.0, shallow, xd= 1 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



LEGEND

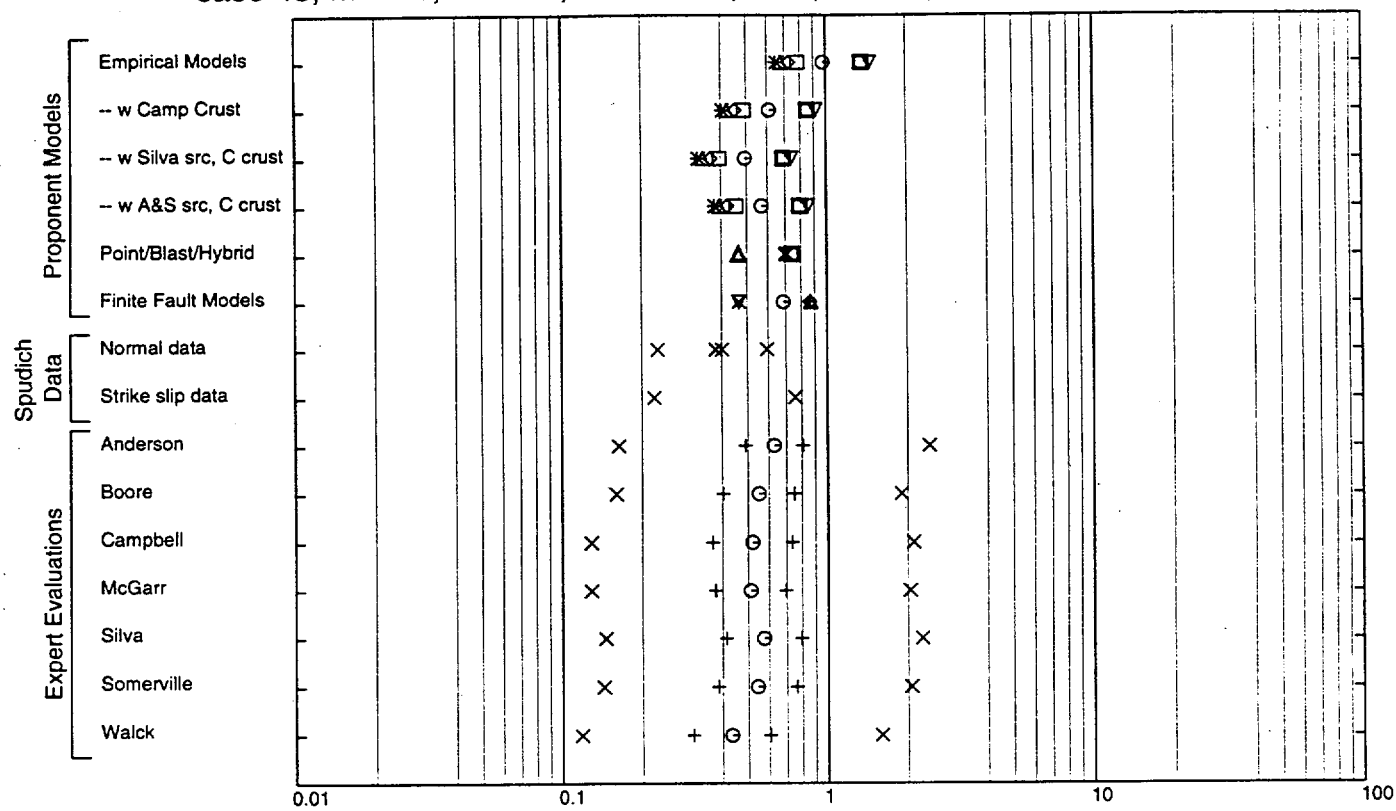
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



Aleatory Sigma (LN units) w/ Comp Var.

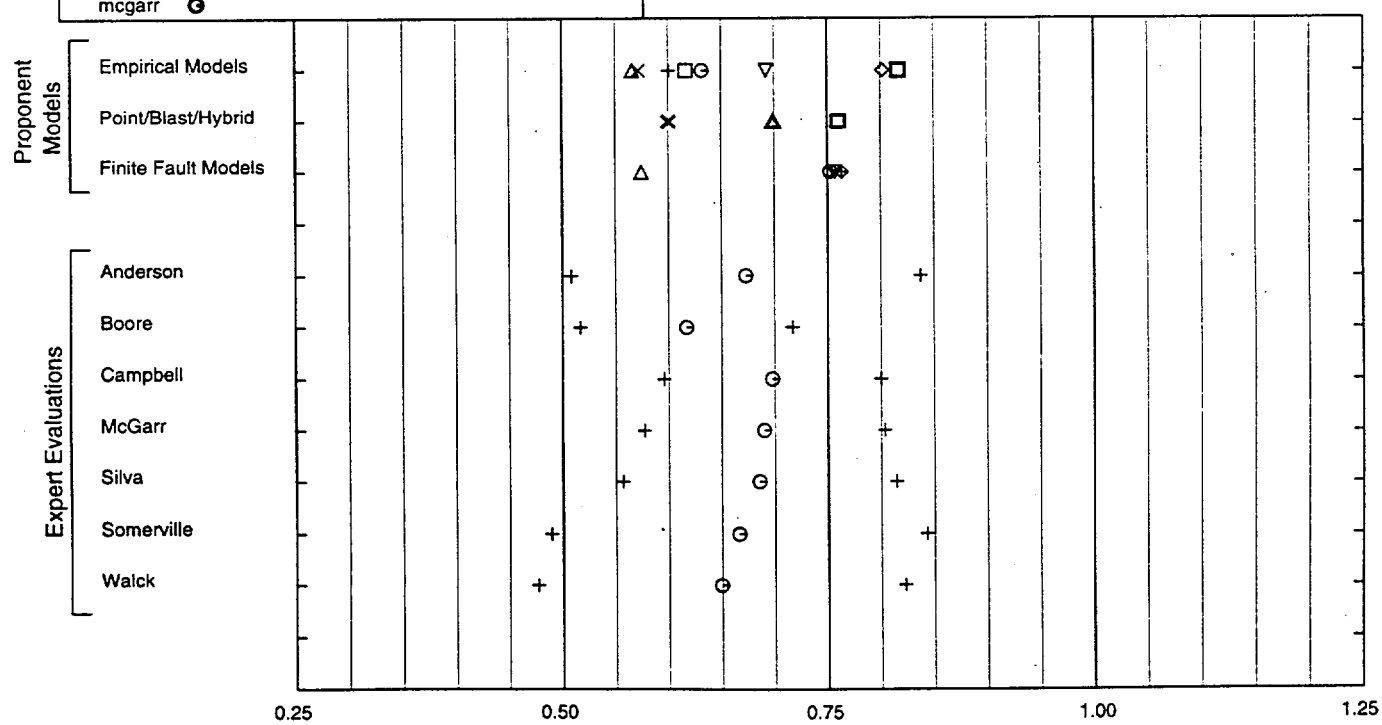
case 43, M= 7.0, shallow, xd= 10 km, HW, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

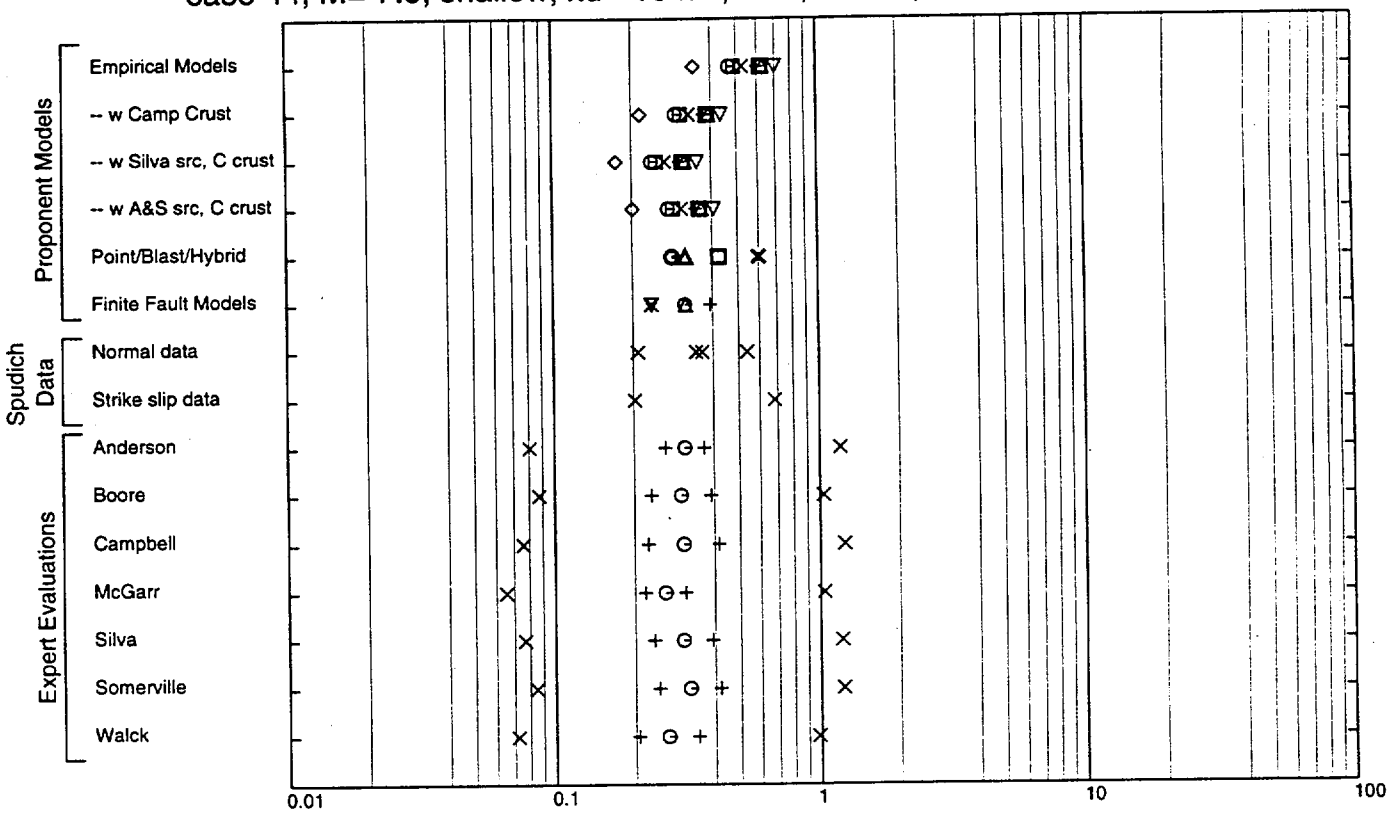
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

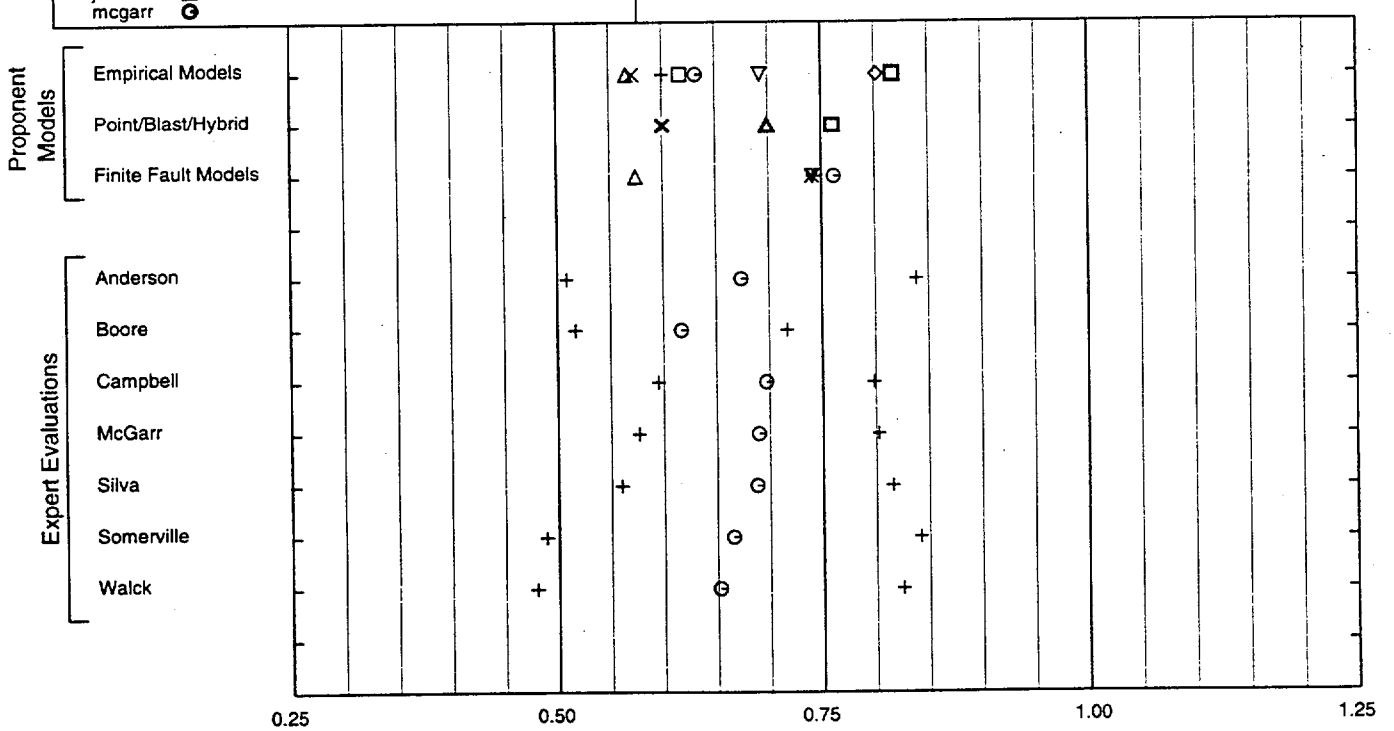
case 44, M= 7.0, shallow, xd=-10 km, FW, 2 Hz, HOR, 6/5/97, Rev 1



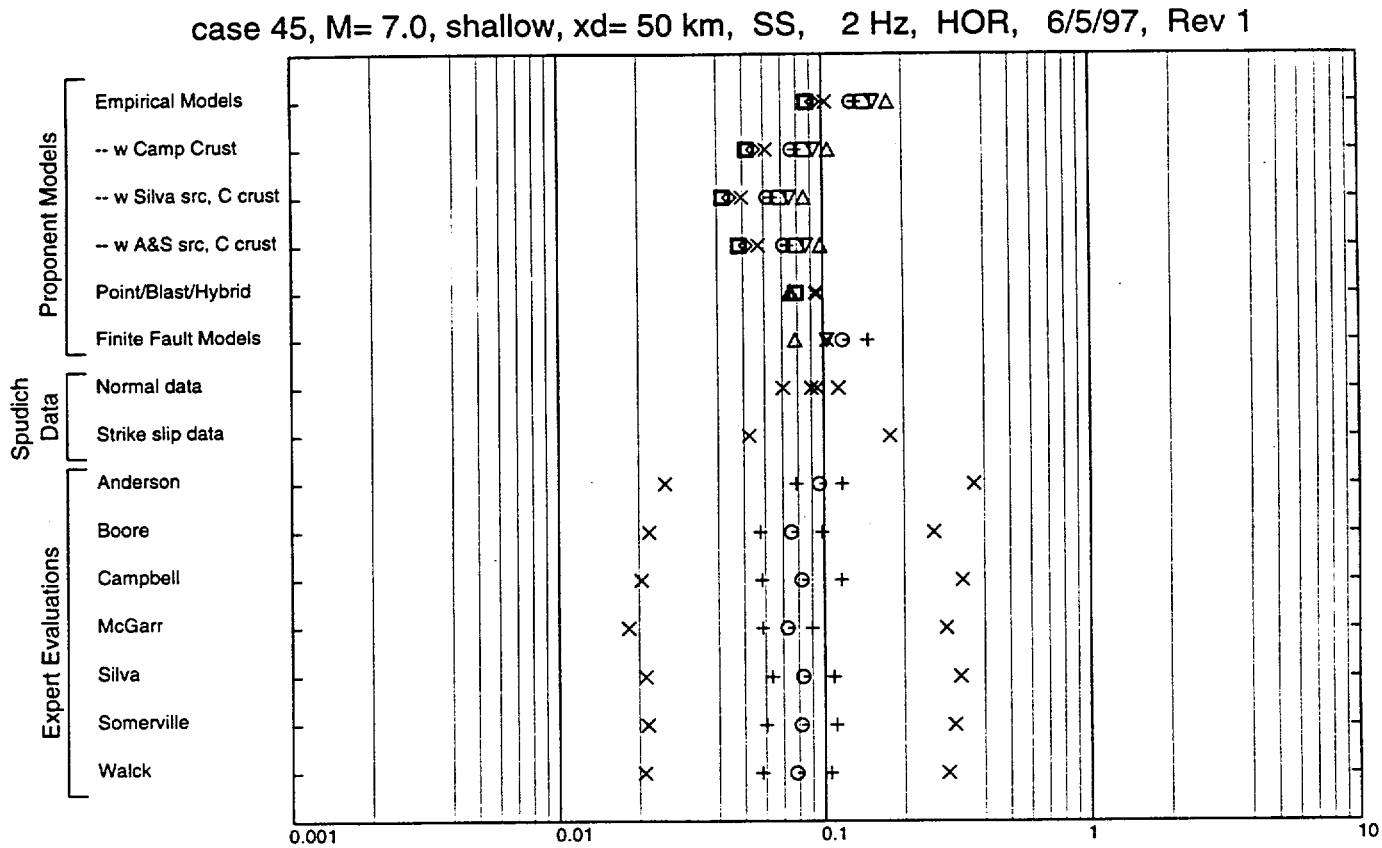
Spectral Acceleration (g)

LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

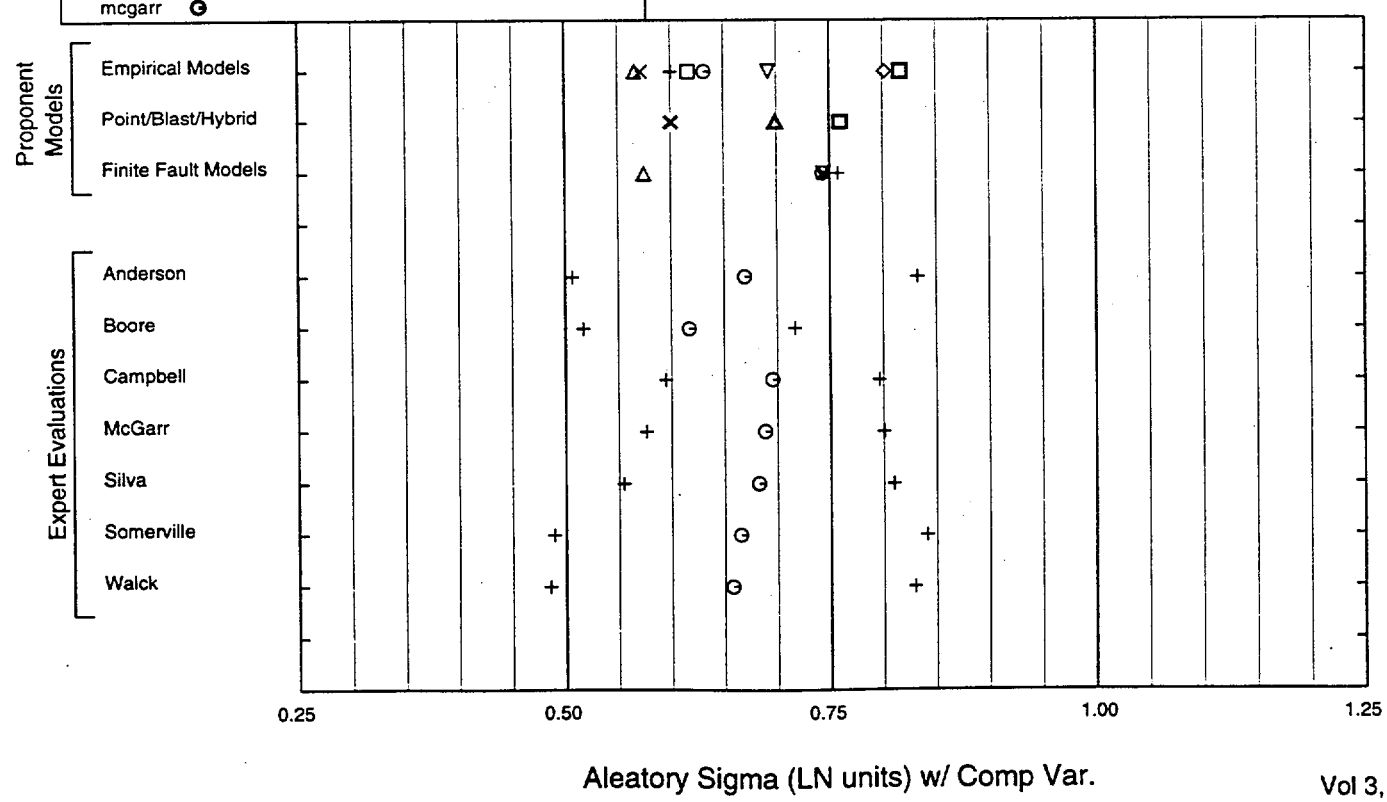


Aleatory Sigma (LN units) w/ Comp Var.

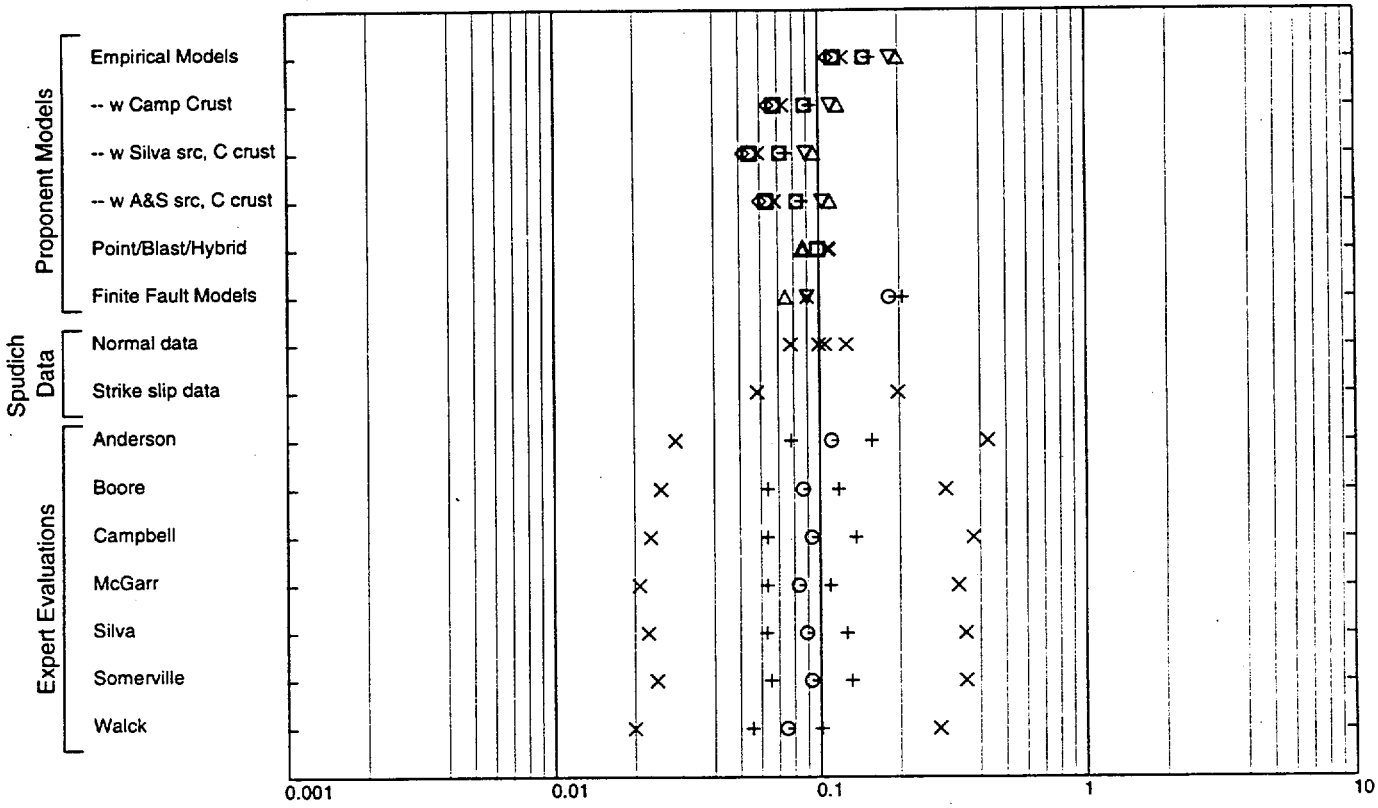


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



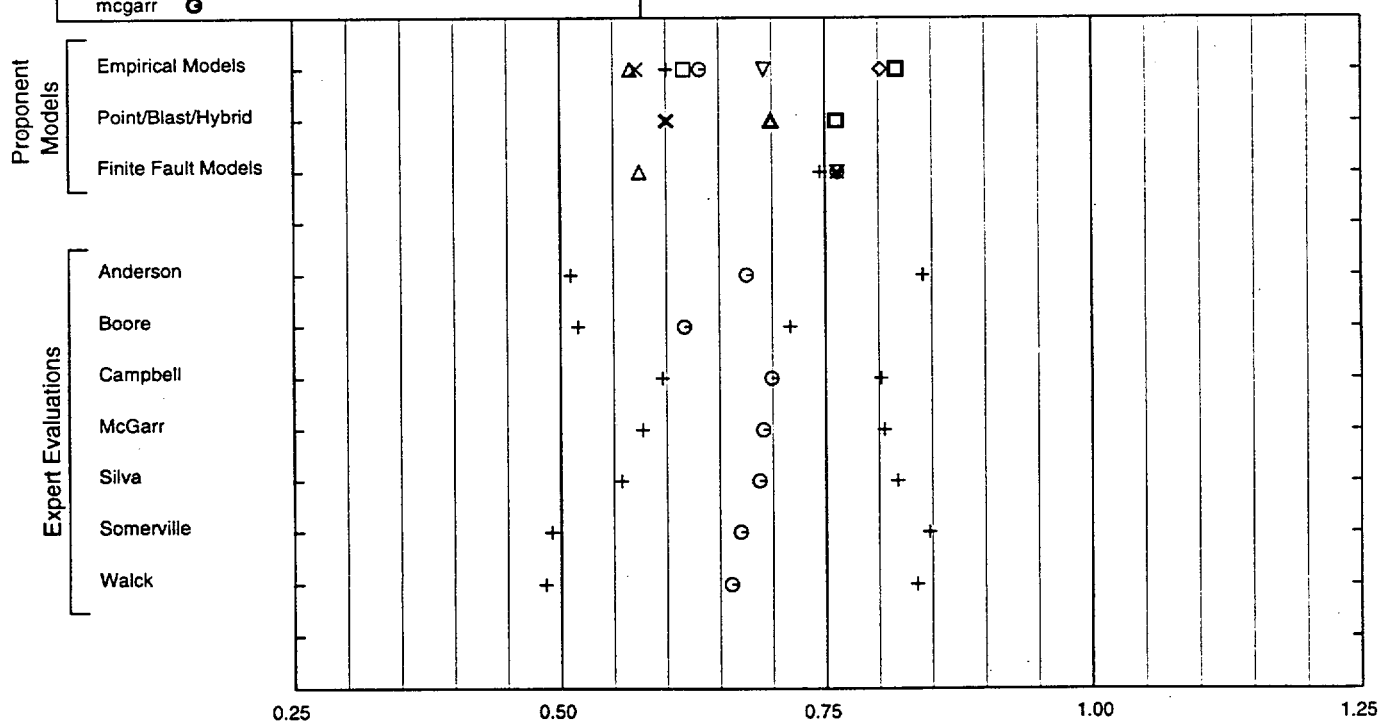
case 46, M= 7.0, shallow, xd= 50 km, HW, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

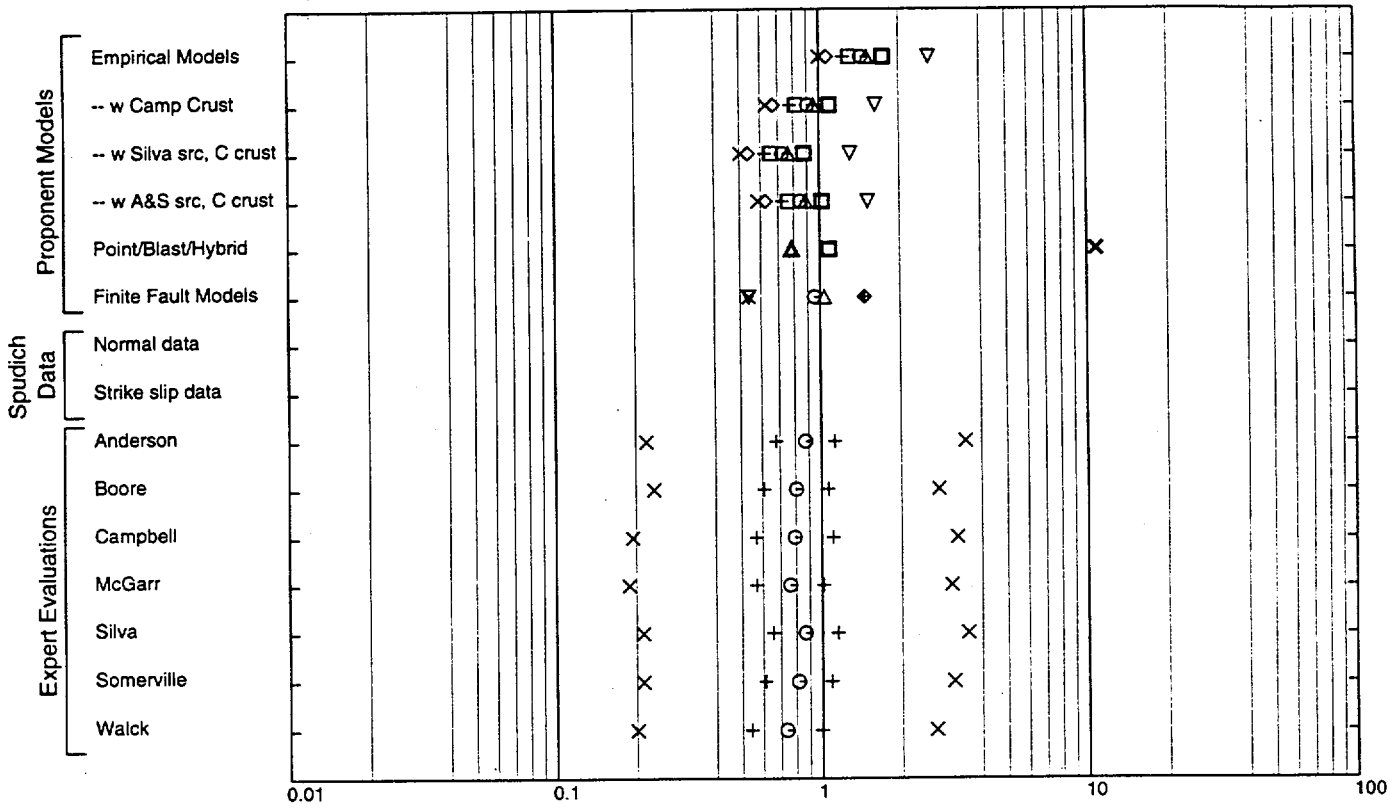
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



Aleatory Sigma (LN units) w/ Comp Var.

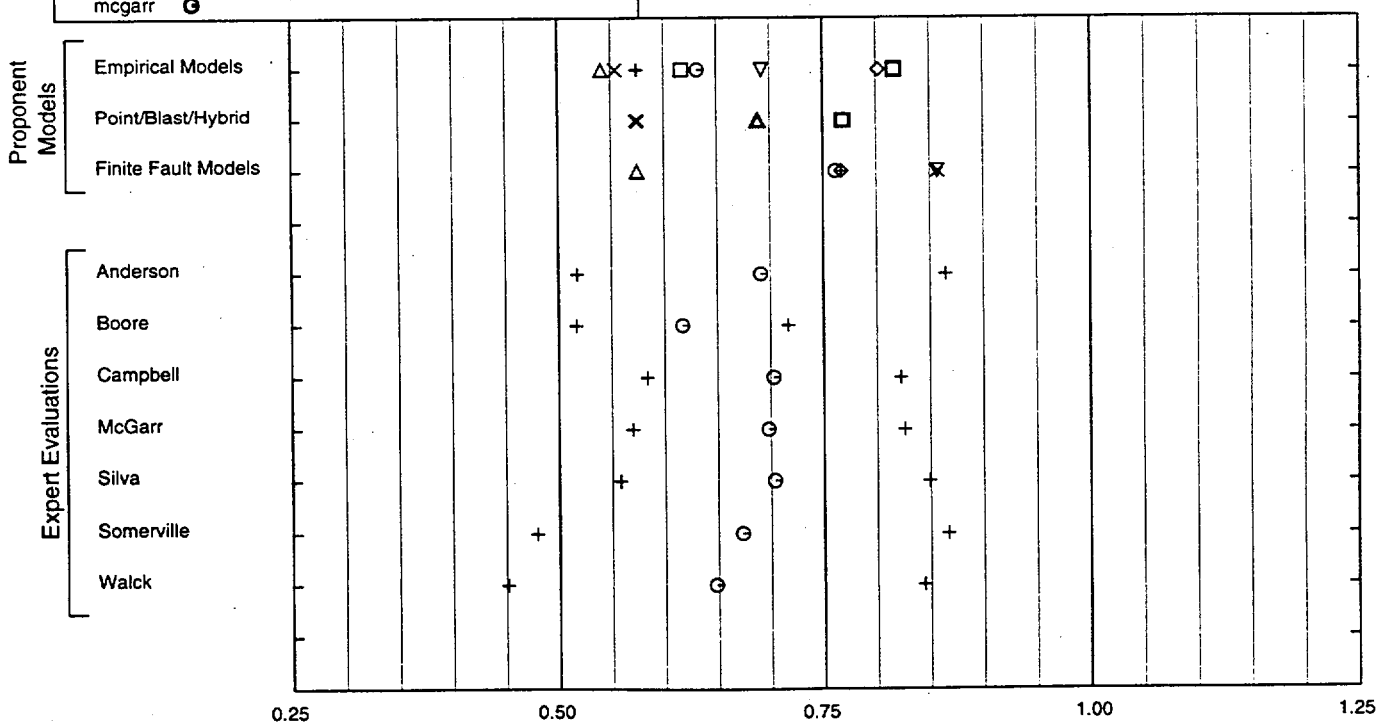
case 47, M= 7.5, shallow, xd= 1 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



Spectral Acceleration (g)

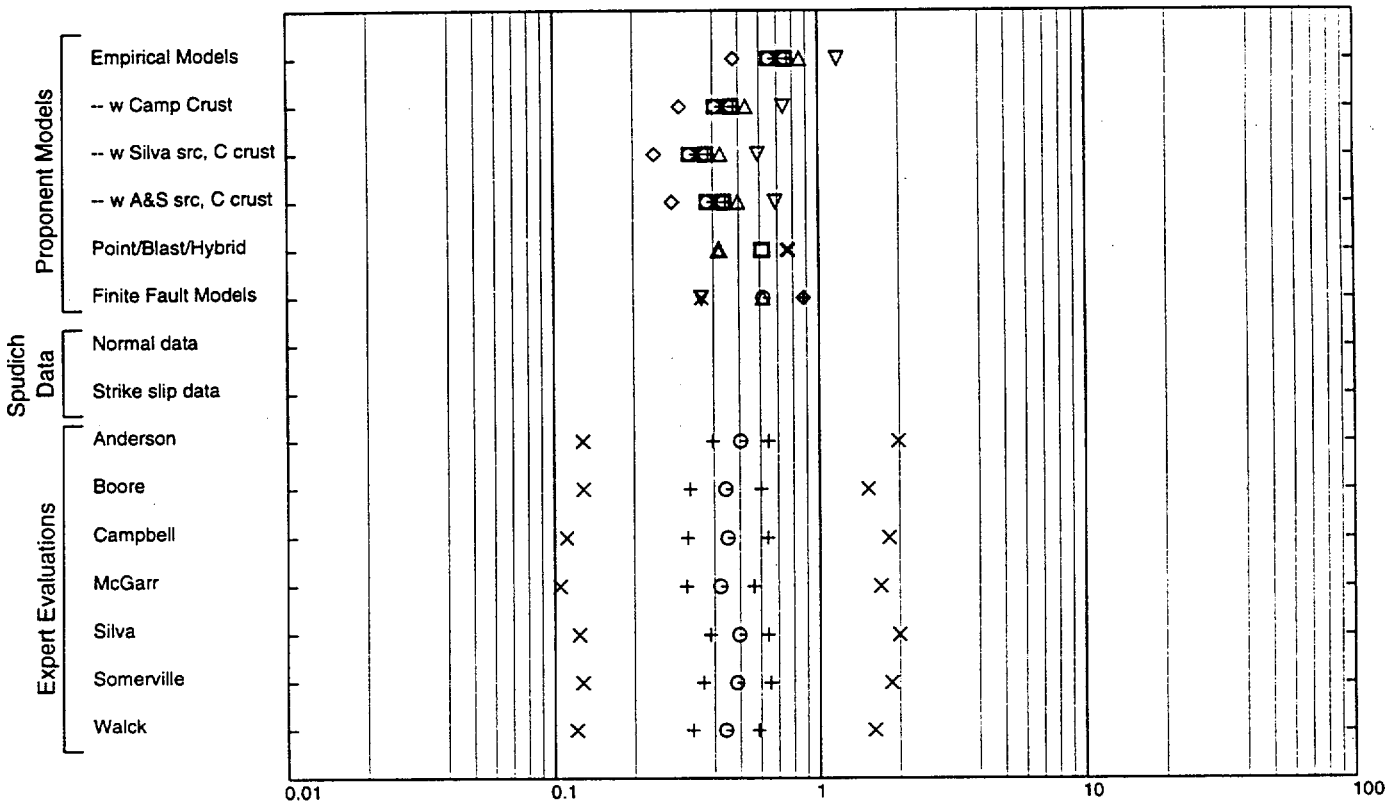
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



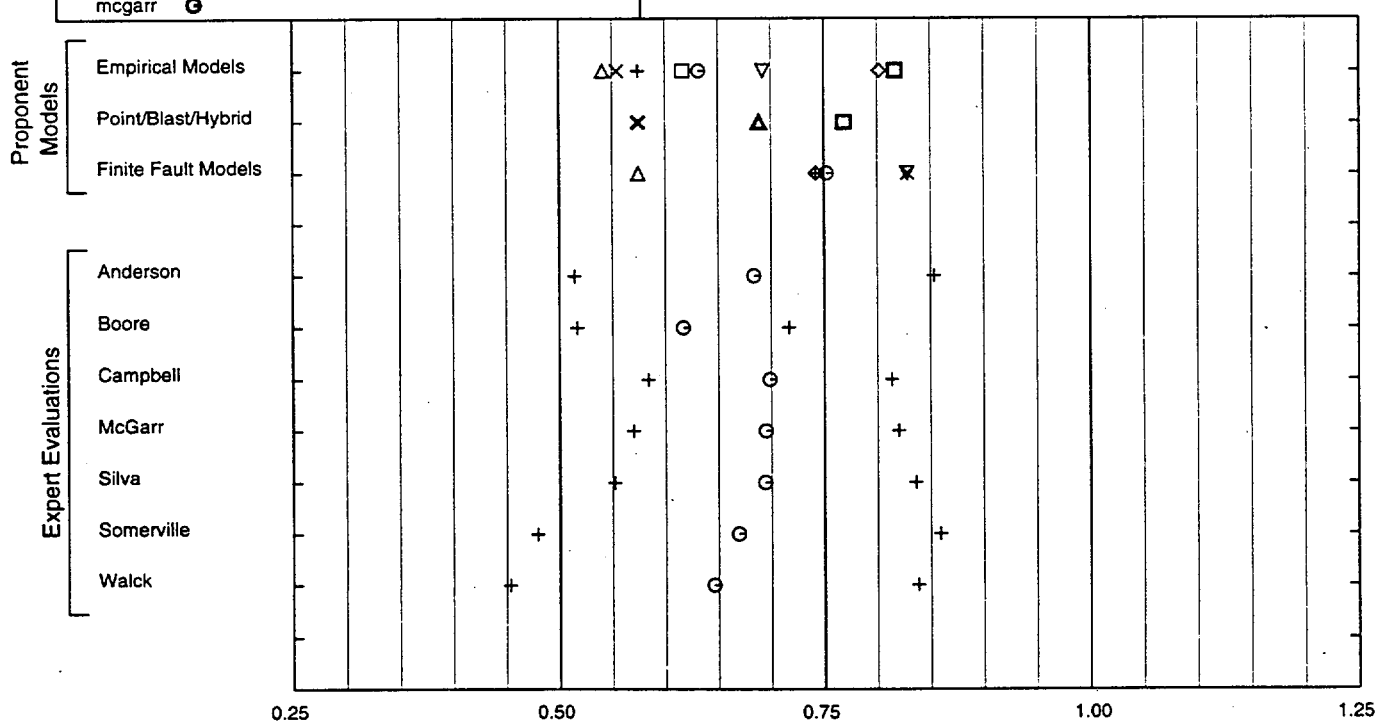
Aleatory Sigma (LN units) w/ Comp Var.

case 48, M= 7.5, shallow, xd= 10 km, SS, 2 Hz, HOR, 6/5/97, Rev 1

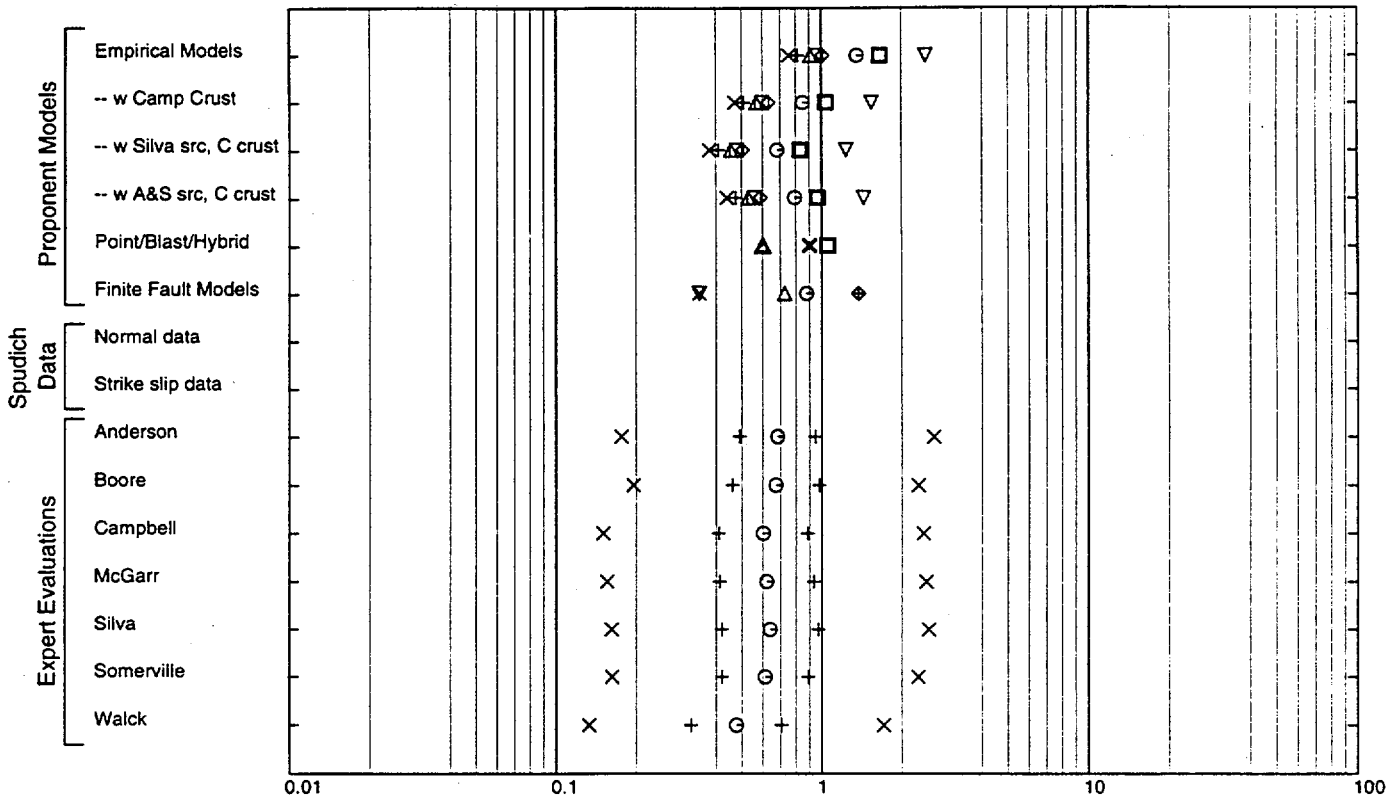


LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



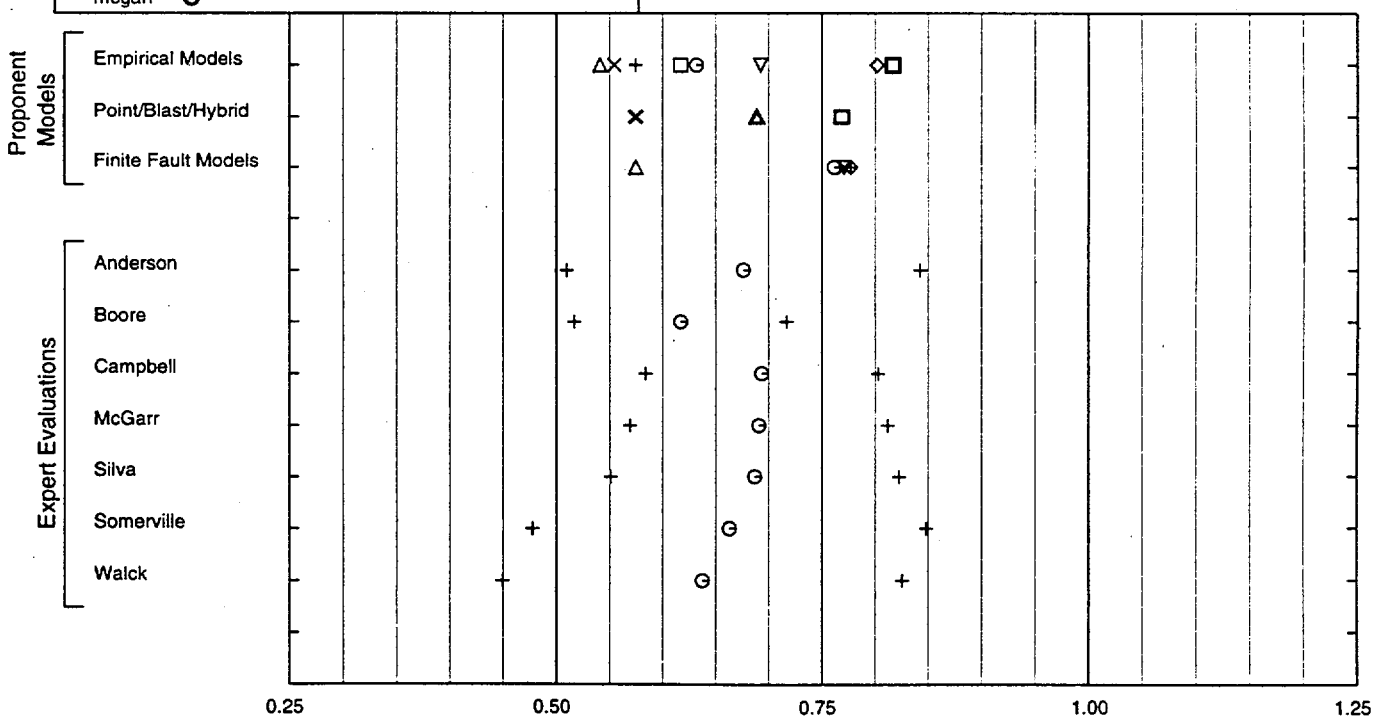
case 49, M= 7.5, shallow, xd= 10 km, HW, 2 Hz, HOR, 6/5/97, Rev 1



LEGEND

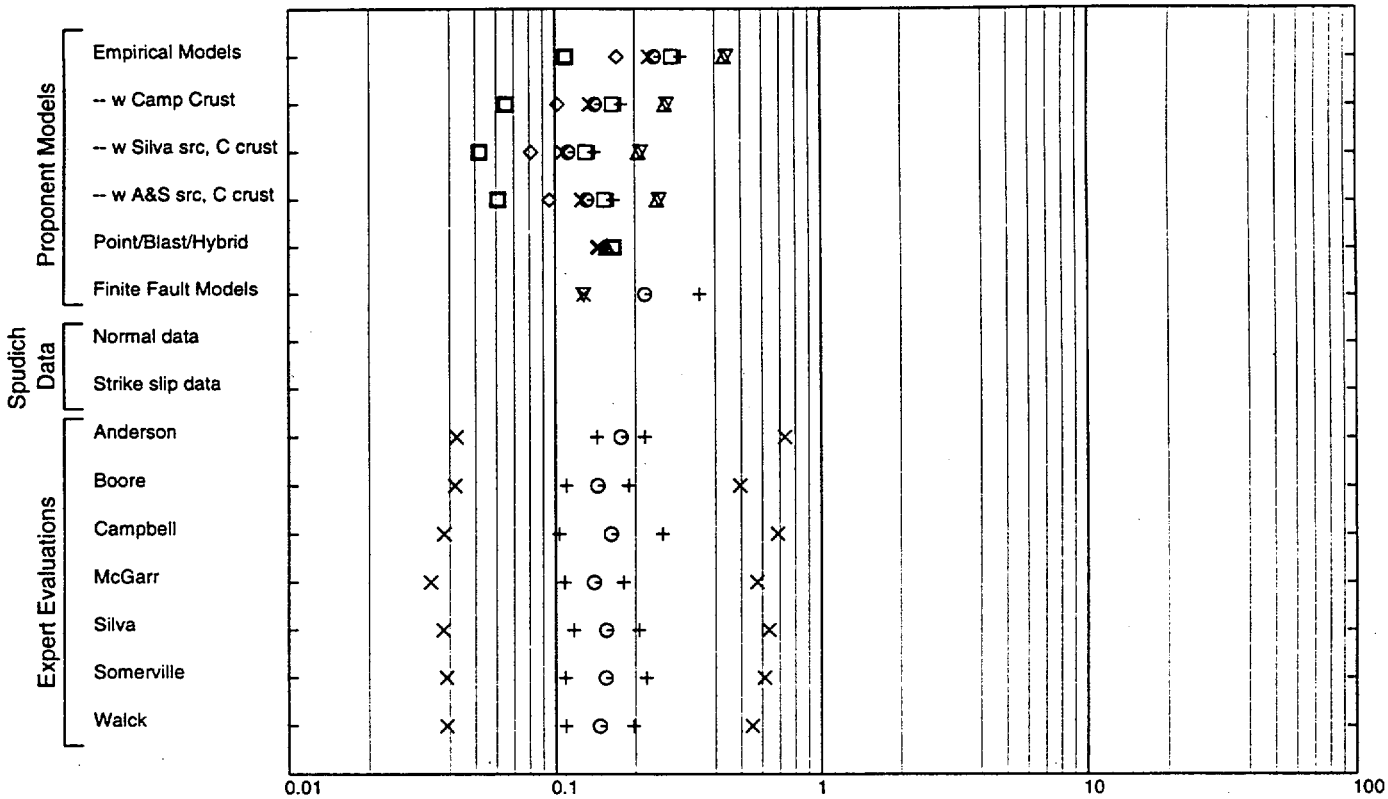
Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				

Spectral Acceleration (g)



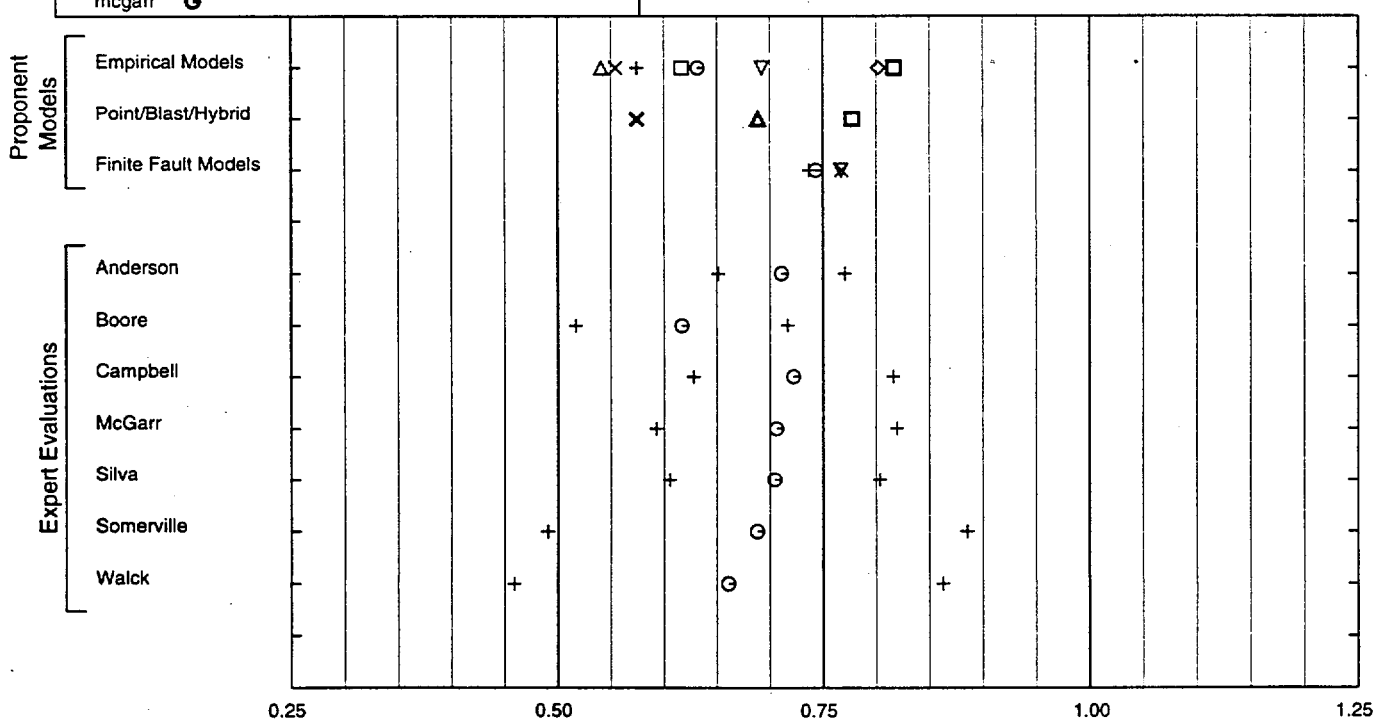
Aleatory Sigma (LN units) w/ Comp Var.

case 50, M= 8.0, shallow, xd= 50 km, SS, 2 Hz, HOR, 6/5/97, Rev 1

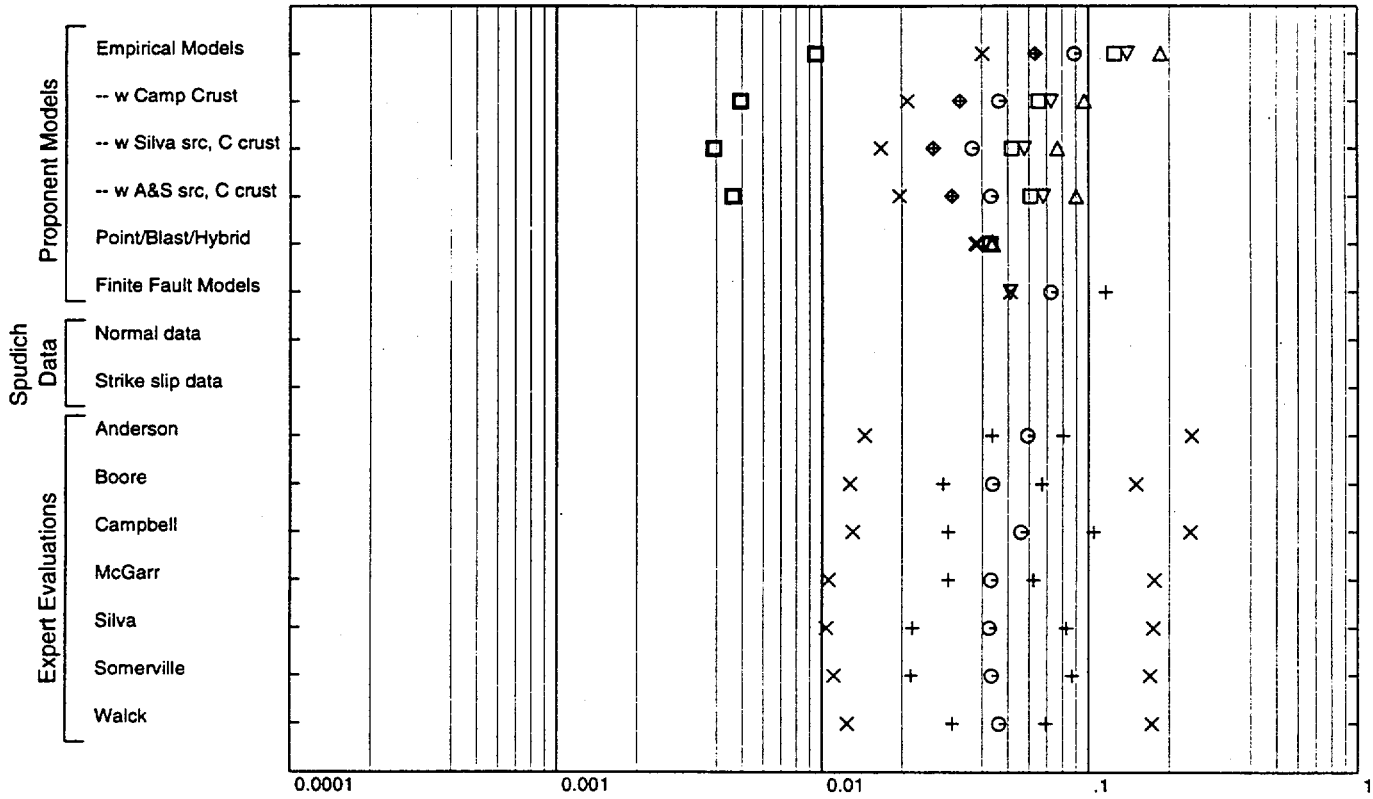


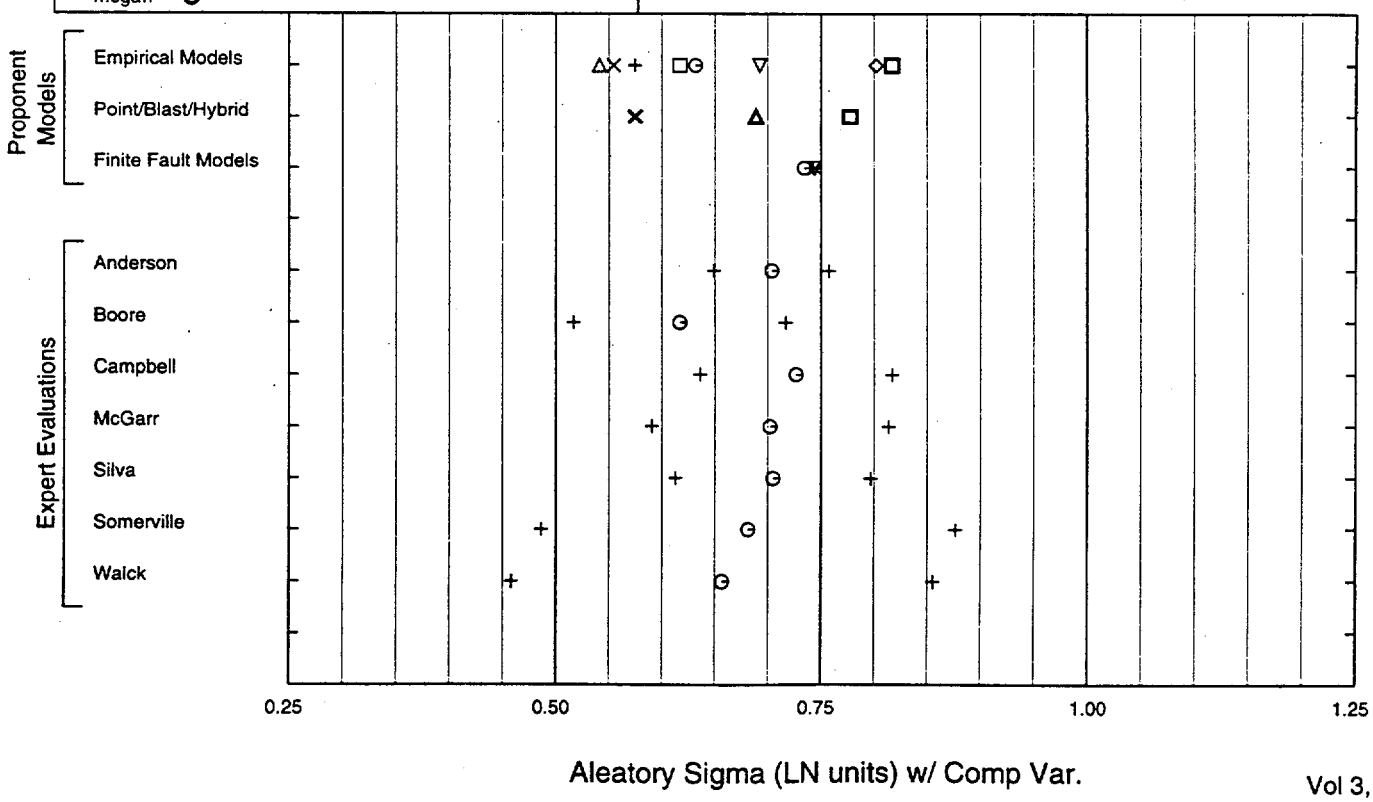
LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊖	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	△	silB	▽
sab	▽				
jb88	□				
mcgarr	⊖				



case 51, M= 8.0, shallow, xd=160 km, SS, 2 Hz, HOR, 6/5/97, Rev 1



LEGEND

Empirical:		Pt/Blast/Hybr:		Finite Fault:	
a&s	□	sil pt	□	and	⊖
bjf	⊖	mcgarr	⊙	sil ff	×
cam	×			som	△
idr	△	blast2	×	andB	+
sad	+			andC	◇
sea	◇	hybrid	▲	silB	▽
sab	▽				
jb88	□				
mcgarr	⊙