

HLWYM HEmails

From: Osvaldo Pensado
Sent: Tuesday, August 14, 2007 3:00 PM
To: Richard Codell
Cc: Christopher Grossman; Jin-Ping Gwo; Bret Leslie
Subject: RE: Bootstrap calculation of mean dose from seismic scenario

Thanks Dick,

According to your plot, we know the peak-mean roughly within a factor of 2 if we use 500-realizations.

To better compare to the ICEM plots, could you generate a linear x - log y plot for the first 10,000 yr? Alternatively, a log-log plot will do to expand on the first 10,000 yr.

In the first 10,000 the ICEM paper says that we know the peak-mean roughly within a factor of 3 with 500-realization runs. The variance in the ICEM paper is admittedly an upper bound. We could compute analytically only an upper bound in the variance; a more precise variance estimate can only be done numerically, as Dick has done.

I think we are consistent. I am not surprised the ICEM variance is a bit higher.

=====
Osvaldo Pensado, Ph.D.
Principal Scientist, SwRI
6220 Culebra Road. San Antonio TX 78238
(210) 522 6084
Fax: (210) 522 6081
=====

-----Original Message-----

From: Richard Codell [mailto:]
Sent: Tuesday, August 14, 2007 12:14 PM
To: Osvaldo Pensado
Cc: Chris Grossman; Jack Gwo; Bret Leslie
Subject: Bootstrap calculation of mean dose from seismic scenario

Osvaldo:

Per our discussion last week on seismic undersampling and your paper, I went back and calculated the mean dose and an estimate of the variance of the mean from the tpa5.1 validation runs in the following steps:

1. I started with 4-1000 vector runs for 10^6 years which had 4 different seismic seeds. These are stored on the shared drive under "tparuns". While these represent possibly an earlier version of the tpa5.1 code, I am assuming that the models for seismic failure rates are the same.
2. I concatenated the 4 - 1000 vector outputs from the output files 'rgwsr.tpa', which shows dose versus time for each vector.
3. I calculated the mean dose vs time from all 4000 vectors.
4. I calculated 100 bootstrap means from randomly sampled sets of 500 vectors with replacement from the set of 4000 vectors.

5. At each time step, I sorted the 100 results from lowest to highest. I then plotted the mean dose vs time, and the fractiles 0.05, 0.25, 0.5, 0.75 and 0.95.

The resulting figure is attached. You might want to compare your results to this one. I believe the bootstrap result shows lower variance.

Sincerely

Dick

Choose the right car based on your needs. Check out [Yahoo! Autos new Car Finder tool](#).

Hearing Identifier: HLW_YuccaMountain_Hold_EX
Email Number: 1190

Mail Envelope Properties (opensado@cnwra.swri.edu20070814145900)

Subject: RE: Bootstrap calculation of mean dose from seismic scenario
Sent Date: 8/14/2007 2:59:39 PM
Received Date: 8/14/2007 2:59:00 PM
From: Osvaldo Pensado

Created By: opensado@cnwra.swri.edu

Recipients:

"Christopher Grossman" <Christopher.Grossman@nrc.gov>
Tracking Status: None
"Jin-Ping Gwo" <Jin-Ping.Gwo@nrc.gov>
Tracking Status: None
"Bret Leslie" <Bret.Leslie@nrc.gov>
Tracking Status: None
"Richard Codell" <[REDACTED]>
Tracking Status: None

Post Office:

| Files | Size | Date & Time |
|--------------|-------------|------------------------|
| MESSAGE | 2629 | 8/14/2007 2:59:00 PM |

Options

Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received: