Hard Rock Design Response Spectra at Southeastern US Sites

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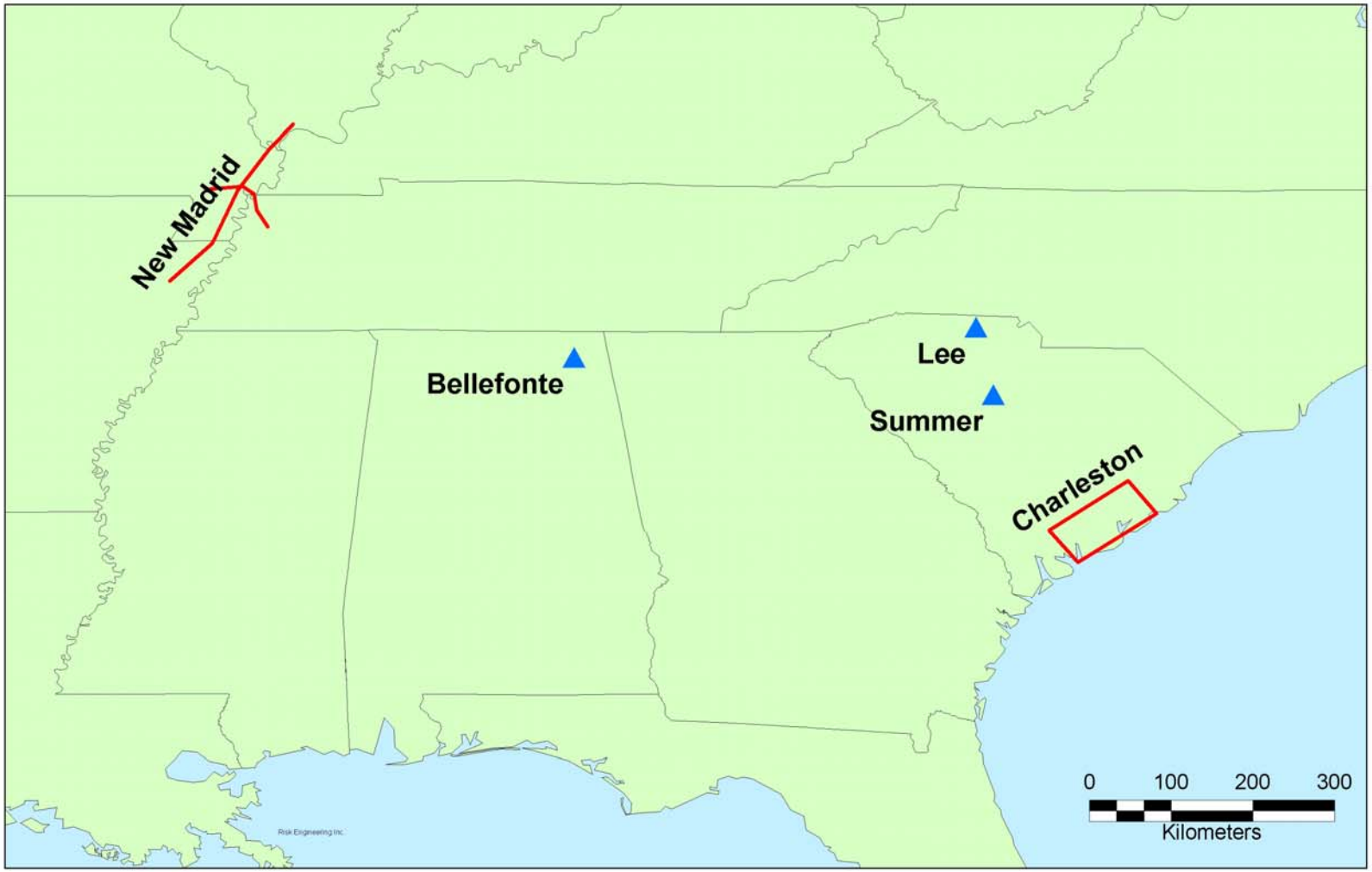
Map of 3 sites



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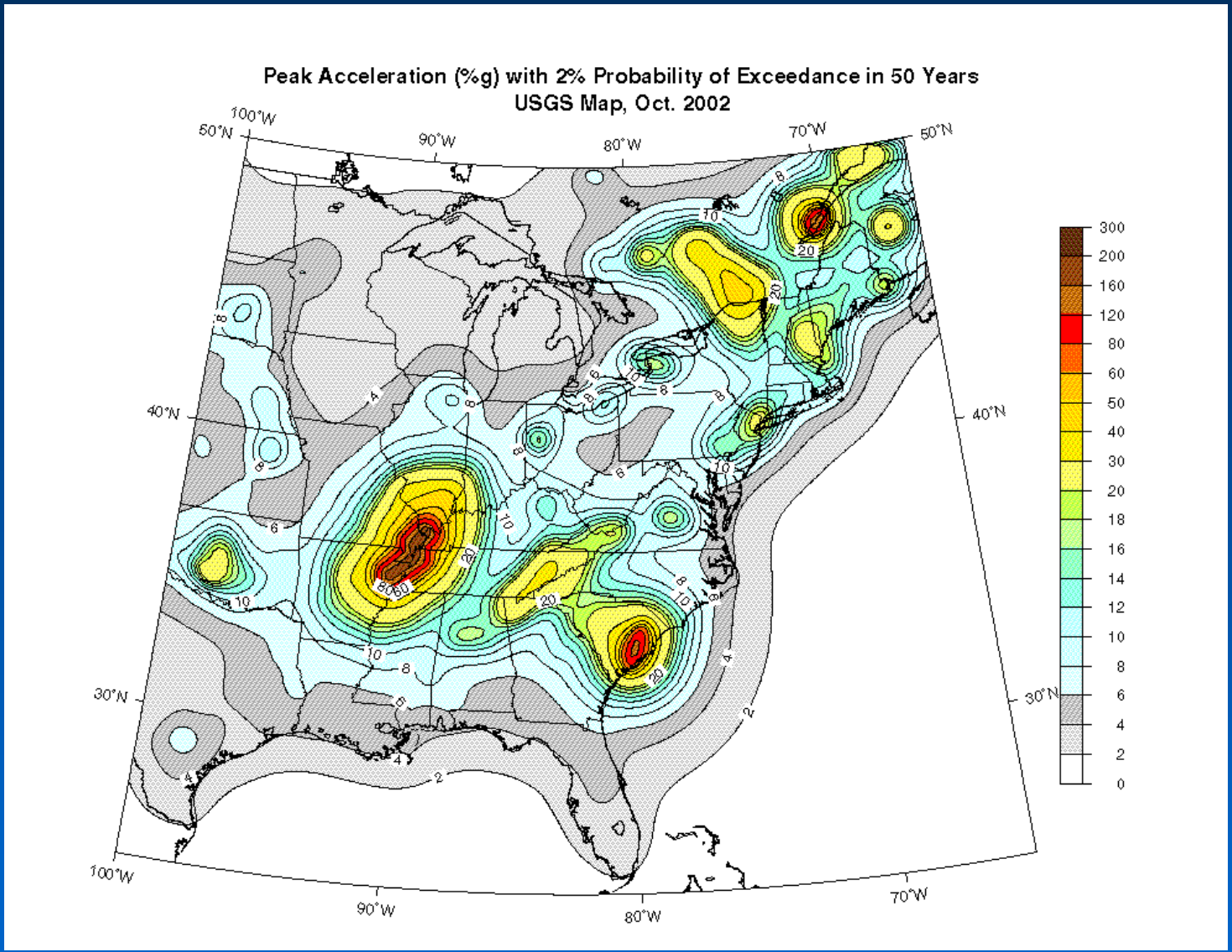

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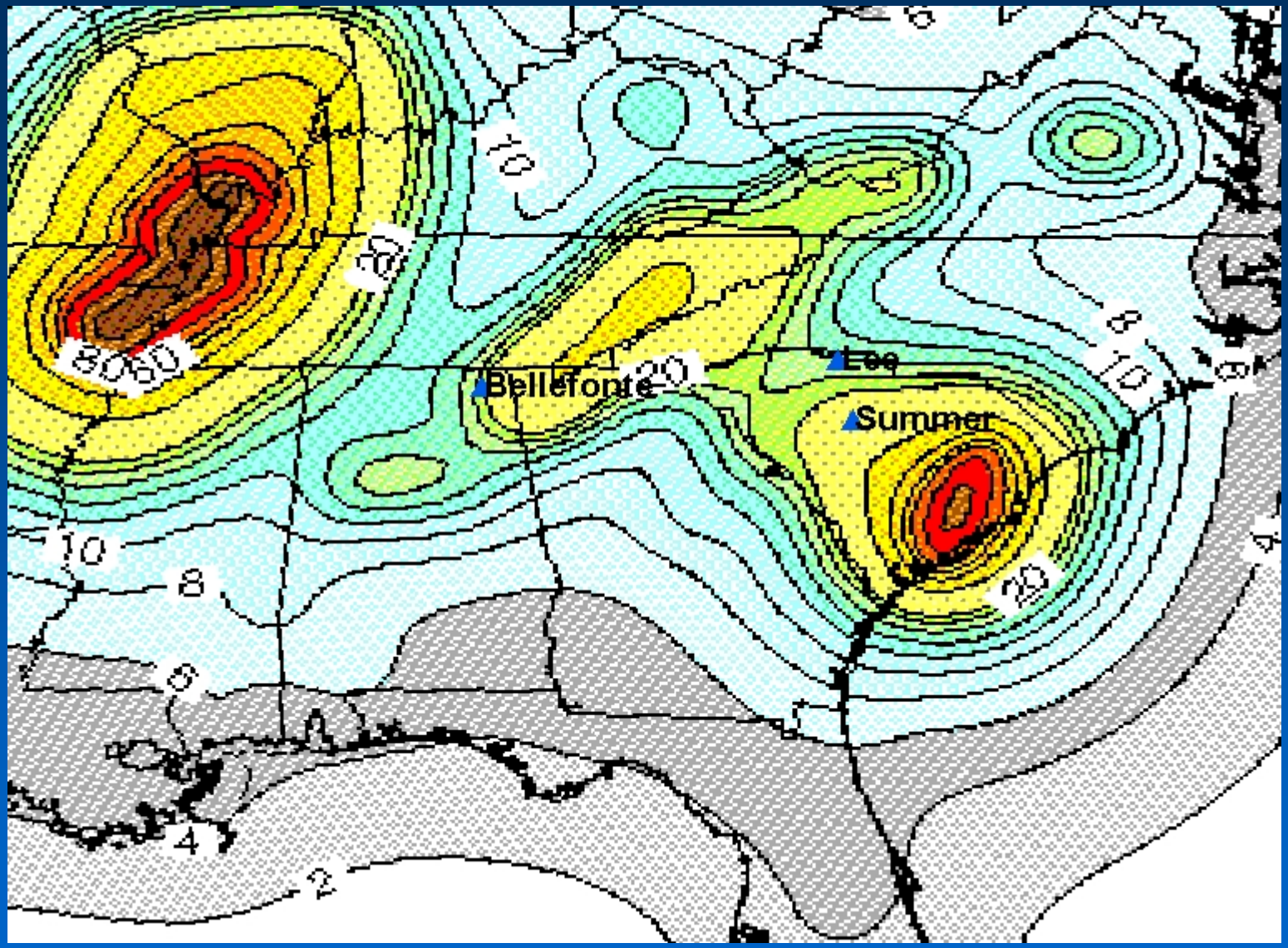

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RKM – 3/1/2007 – 4/20

Assumptions for PSHA

1. Hard rock conditions
2. Update EPRI-SOG analysis with new models for Charleston and New Madrid sources
3. Apply CAV filter
4. Use EPRI (2004) ground motion equations with revised σ.

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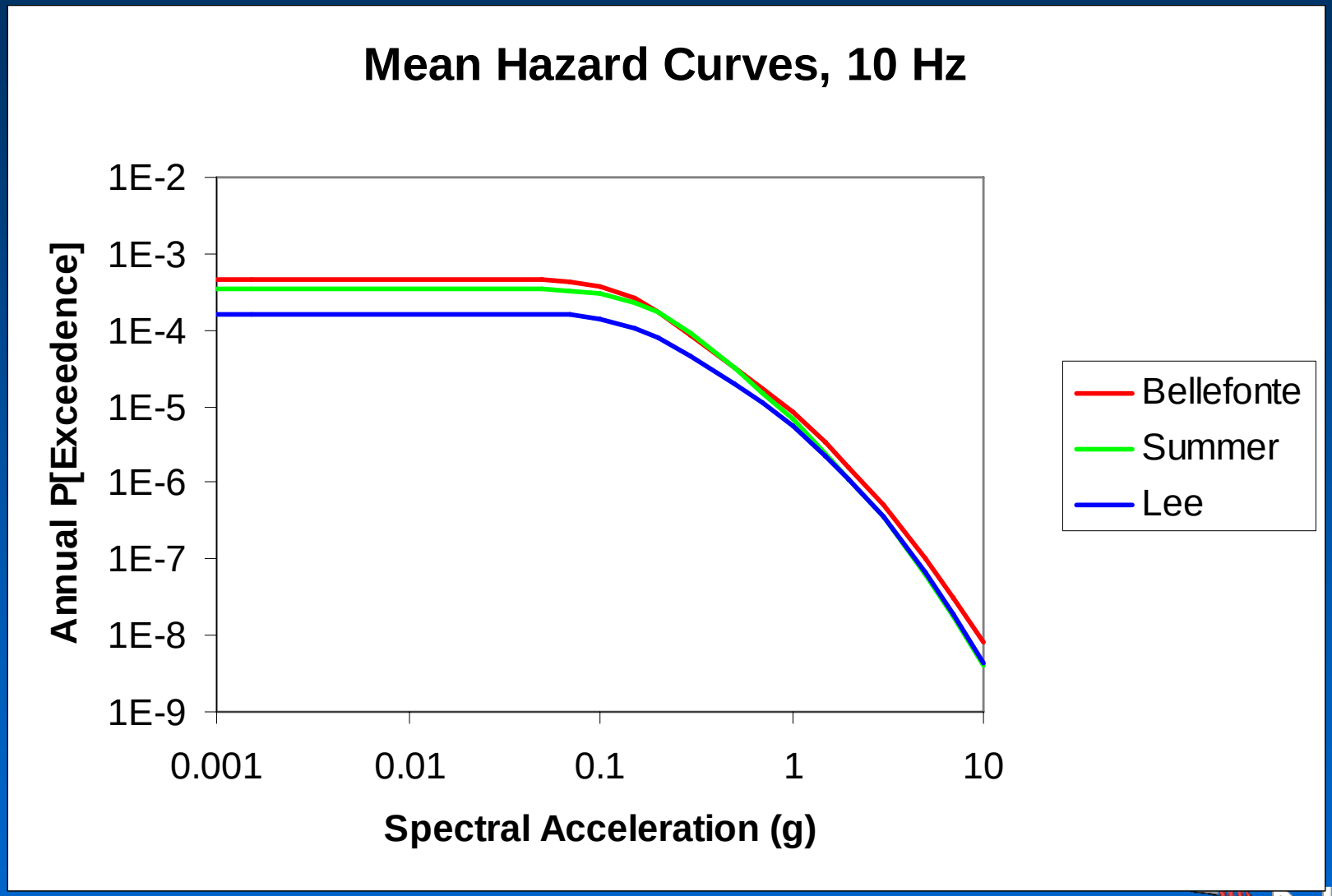
10 Hz hazard curves for 3 sites



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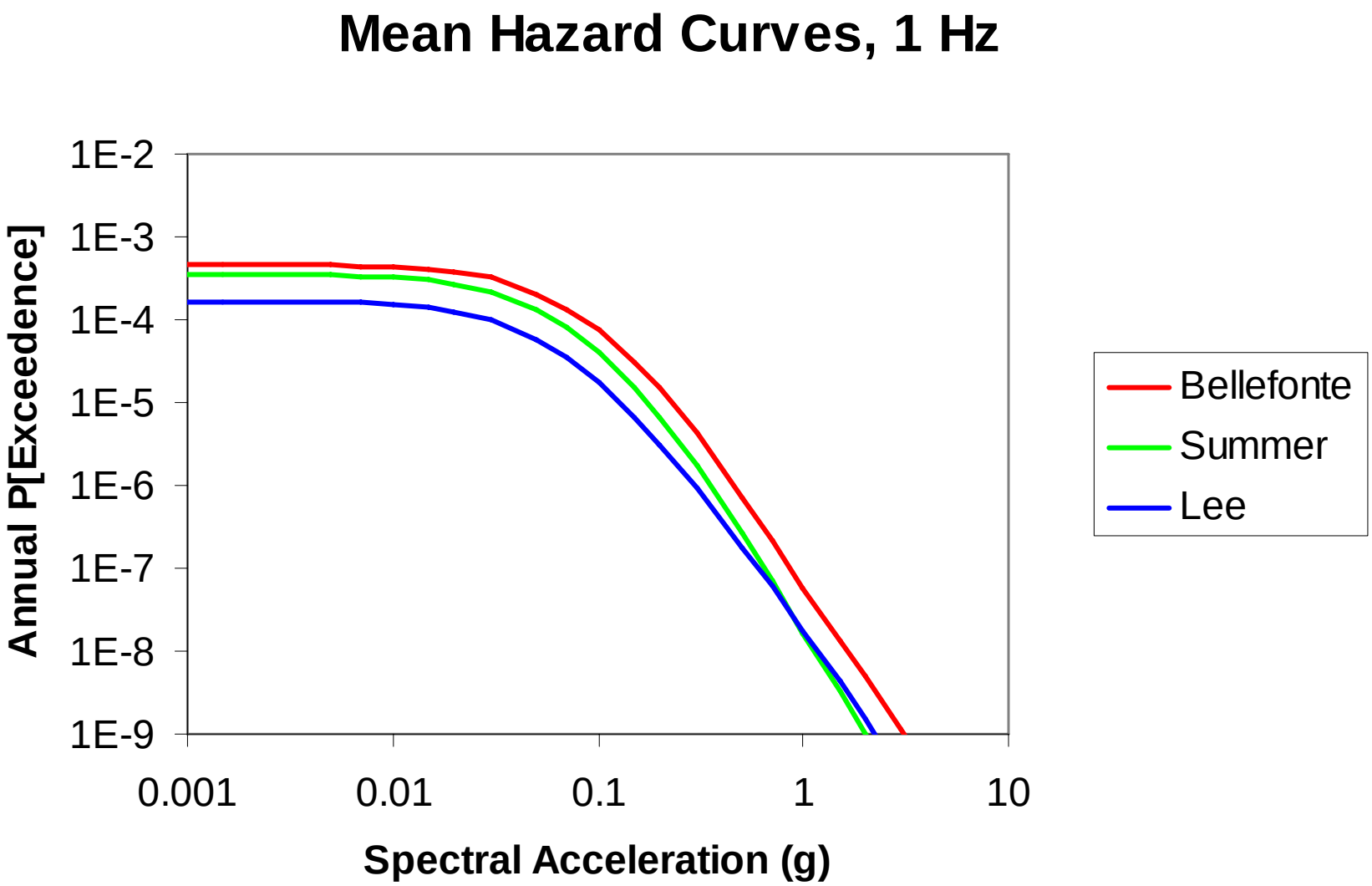
1 Hz hazard curves for 3 sites



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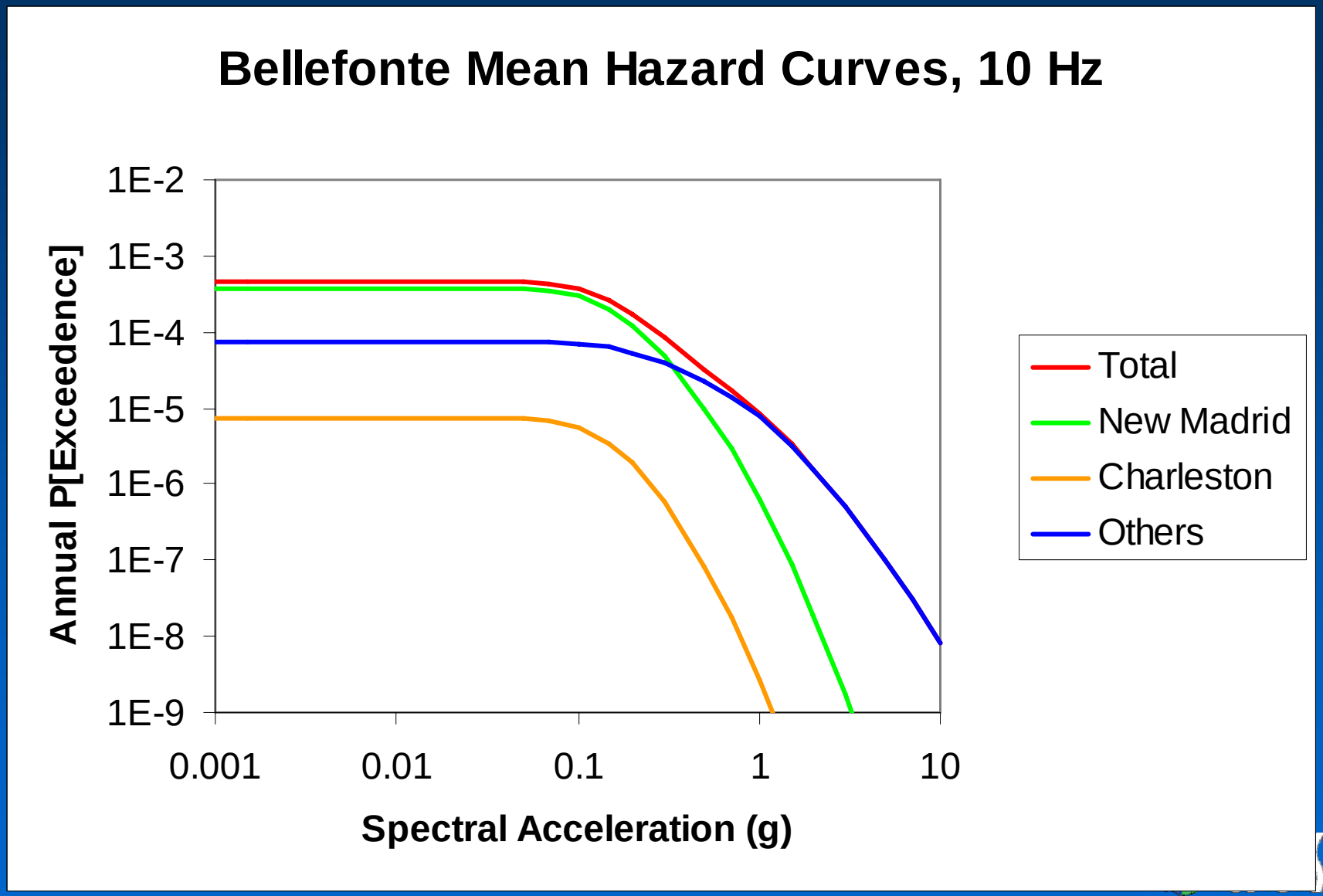
Contribution to 10 Hz hazard by source



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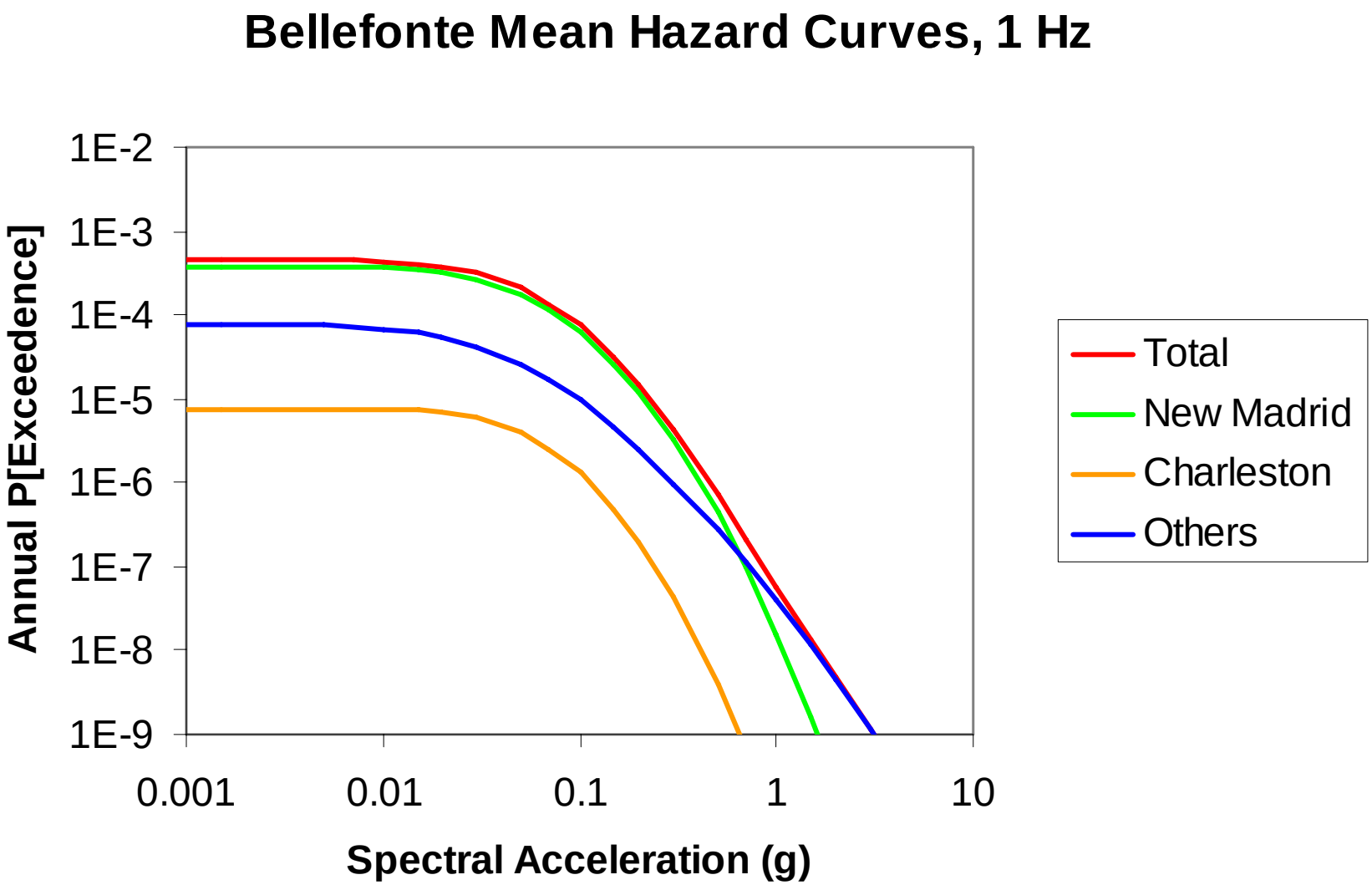
Contribution to 1 Hz hazard by source



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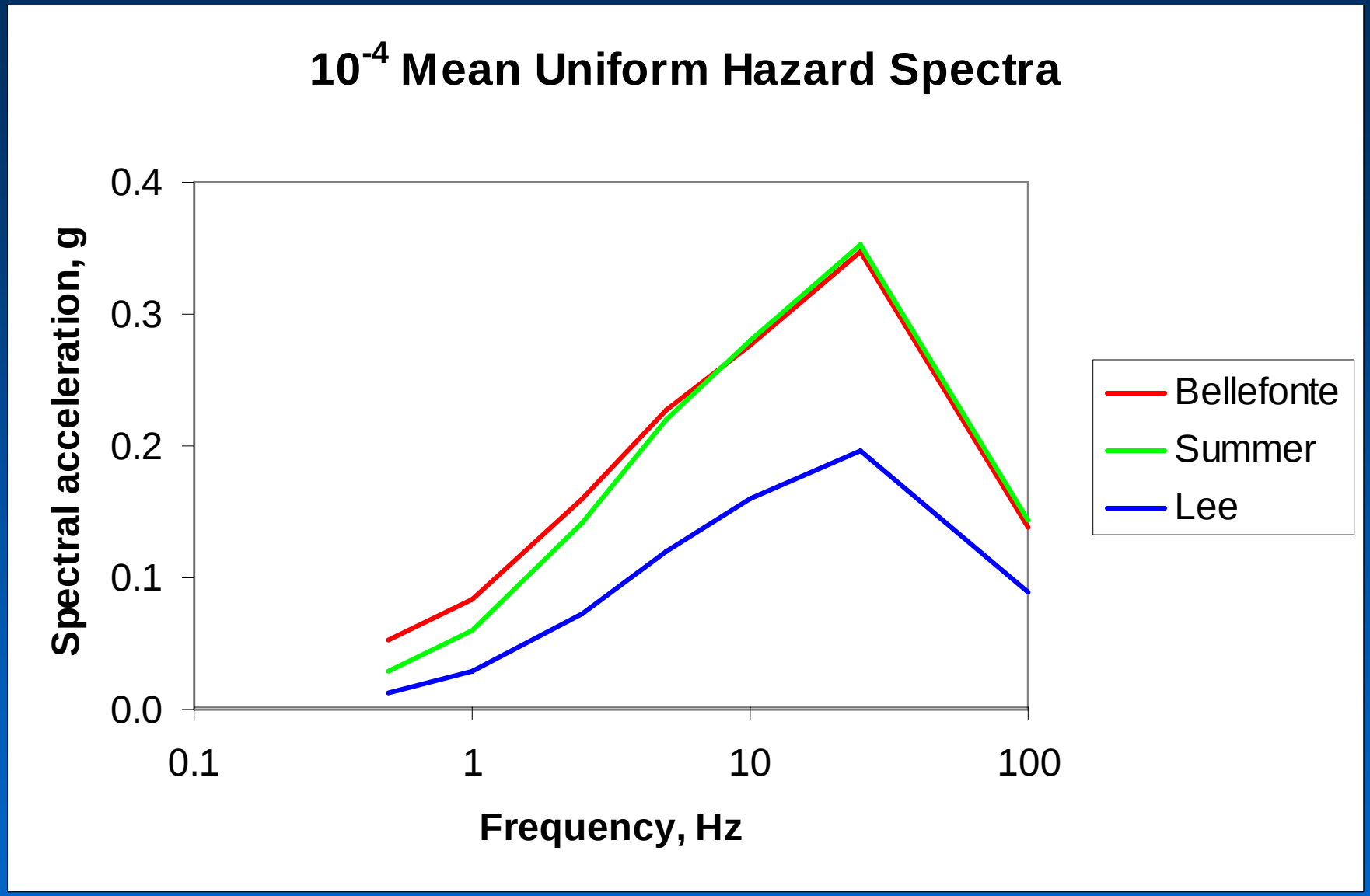

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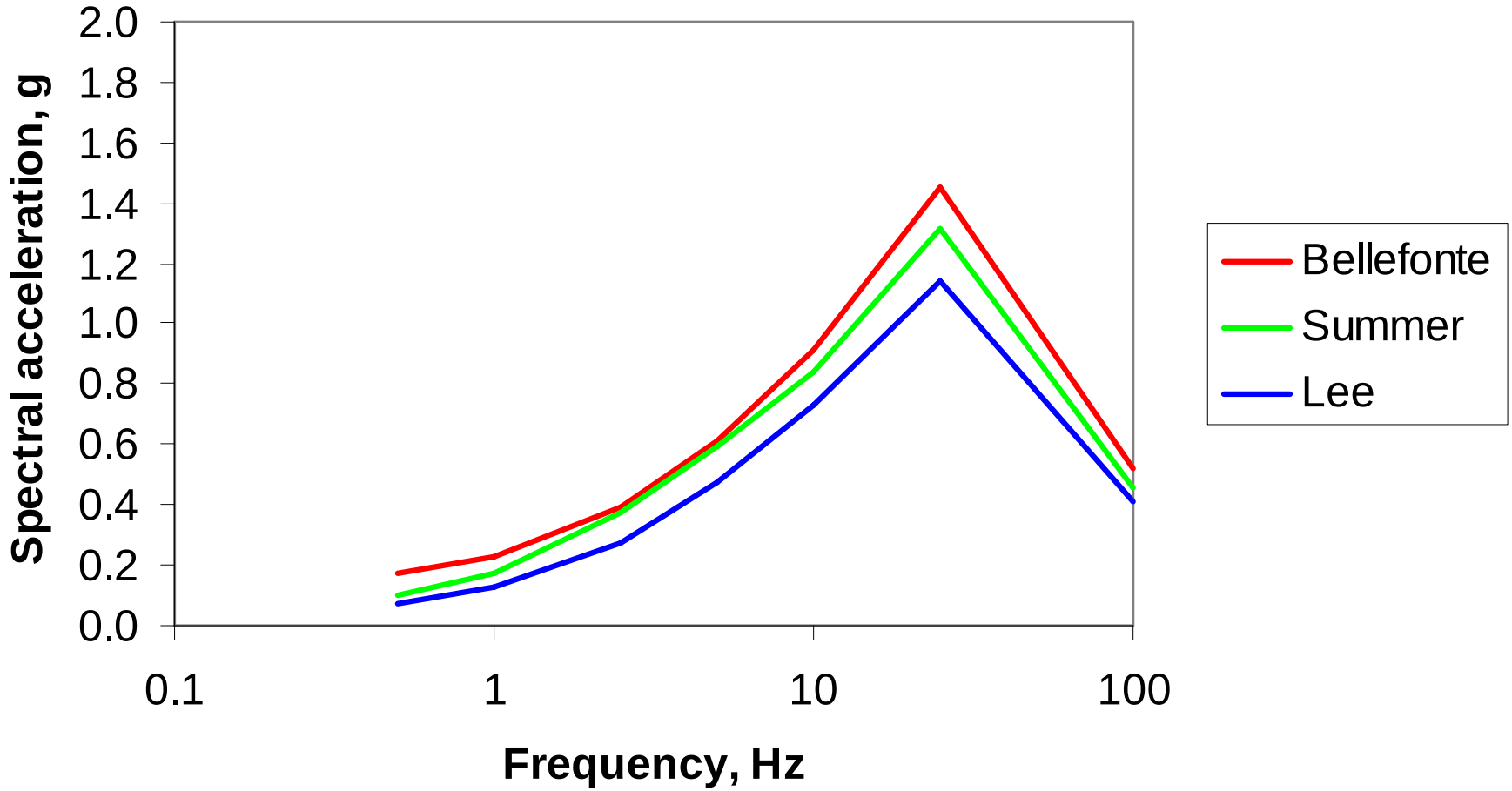
10^{-5} Mean Uniform Hazard Spectra



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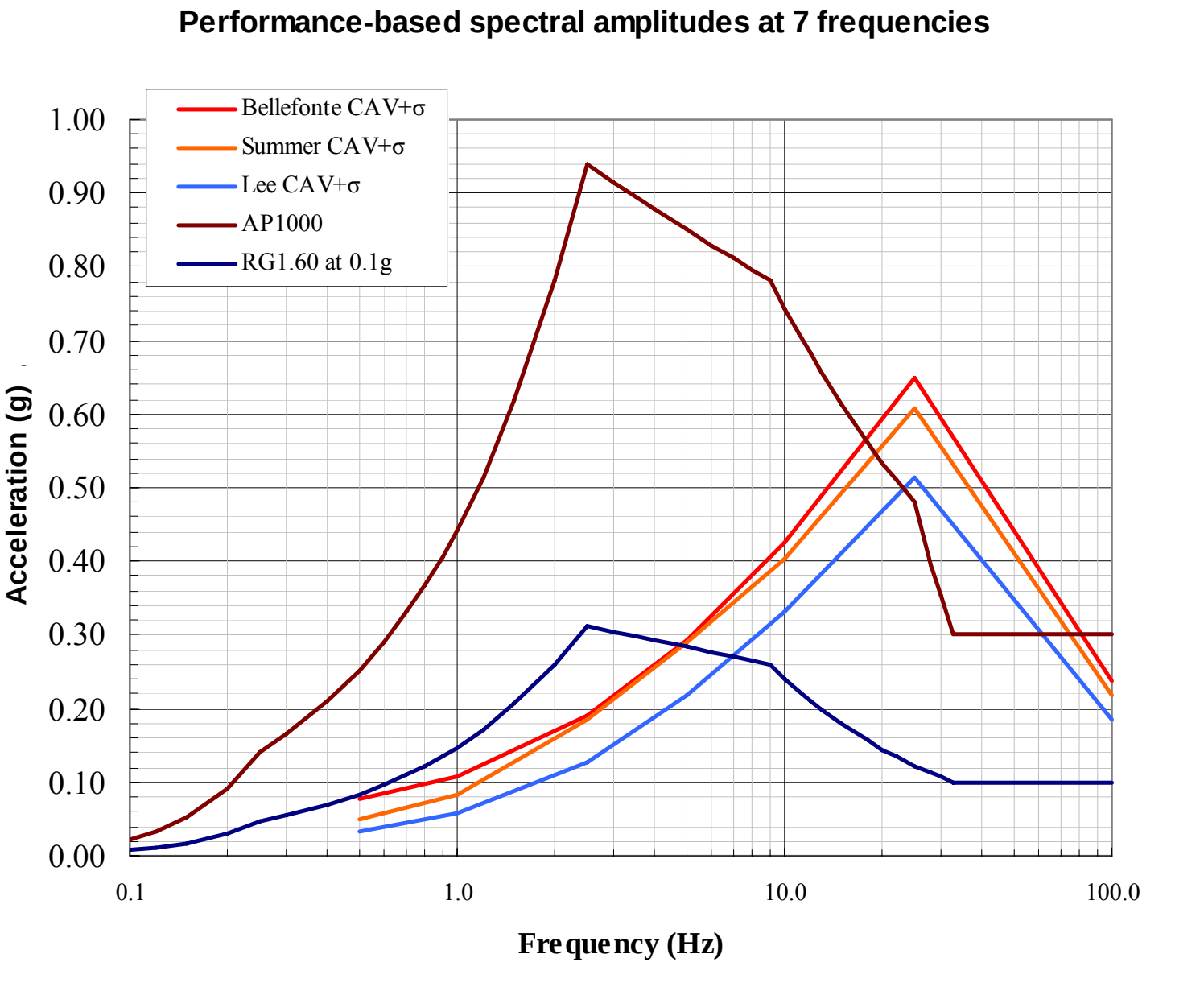

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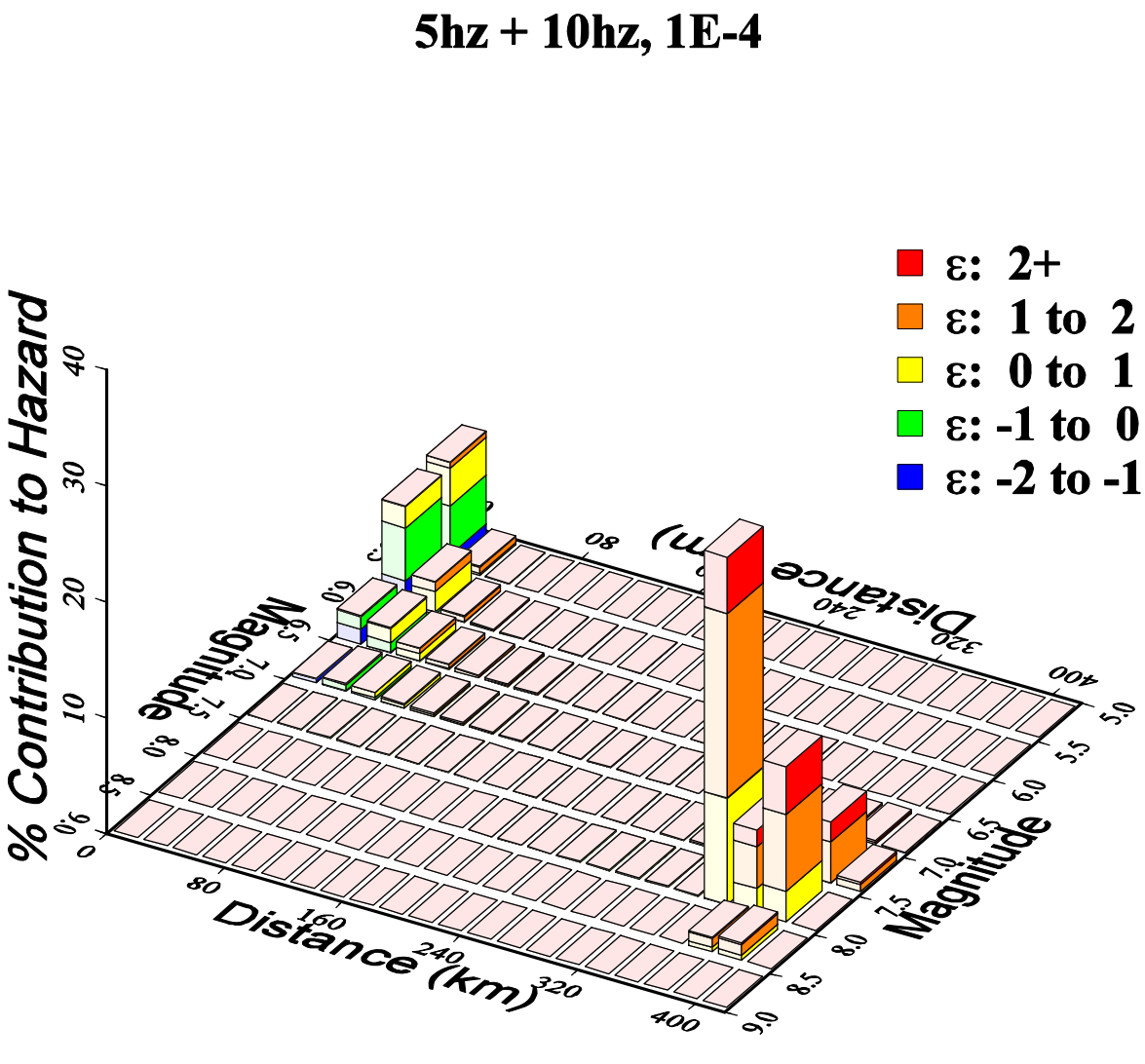
Mean 10^{-4} deaggregation, average of 5 and 10 Hz



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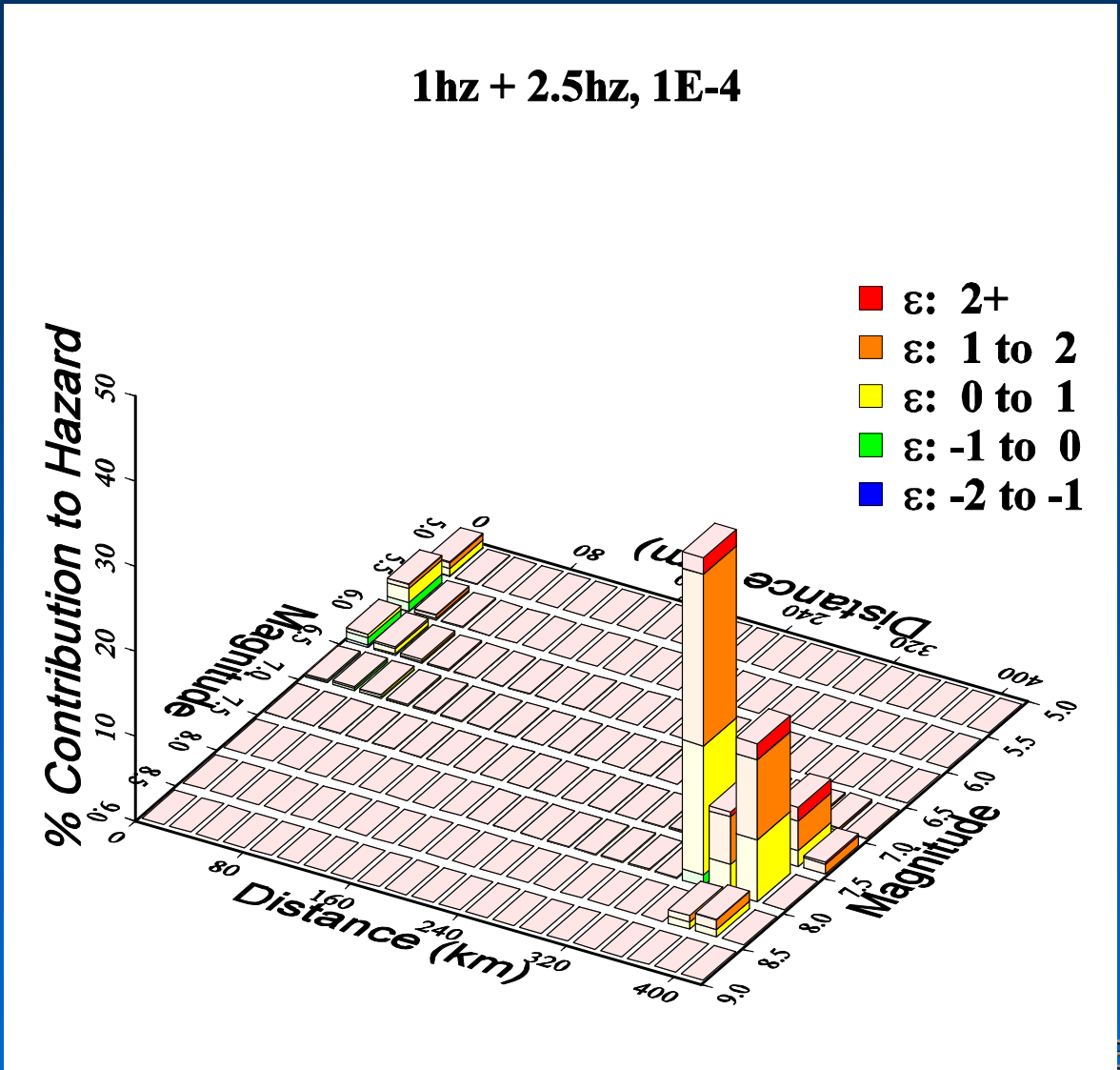
Mean 10^{-4} deaggregation, average of 1 and 2.5 Hz



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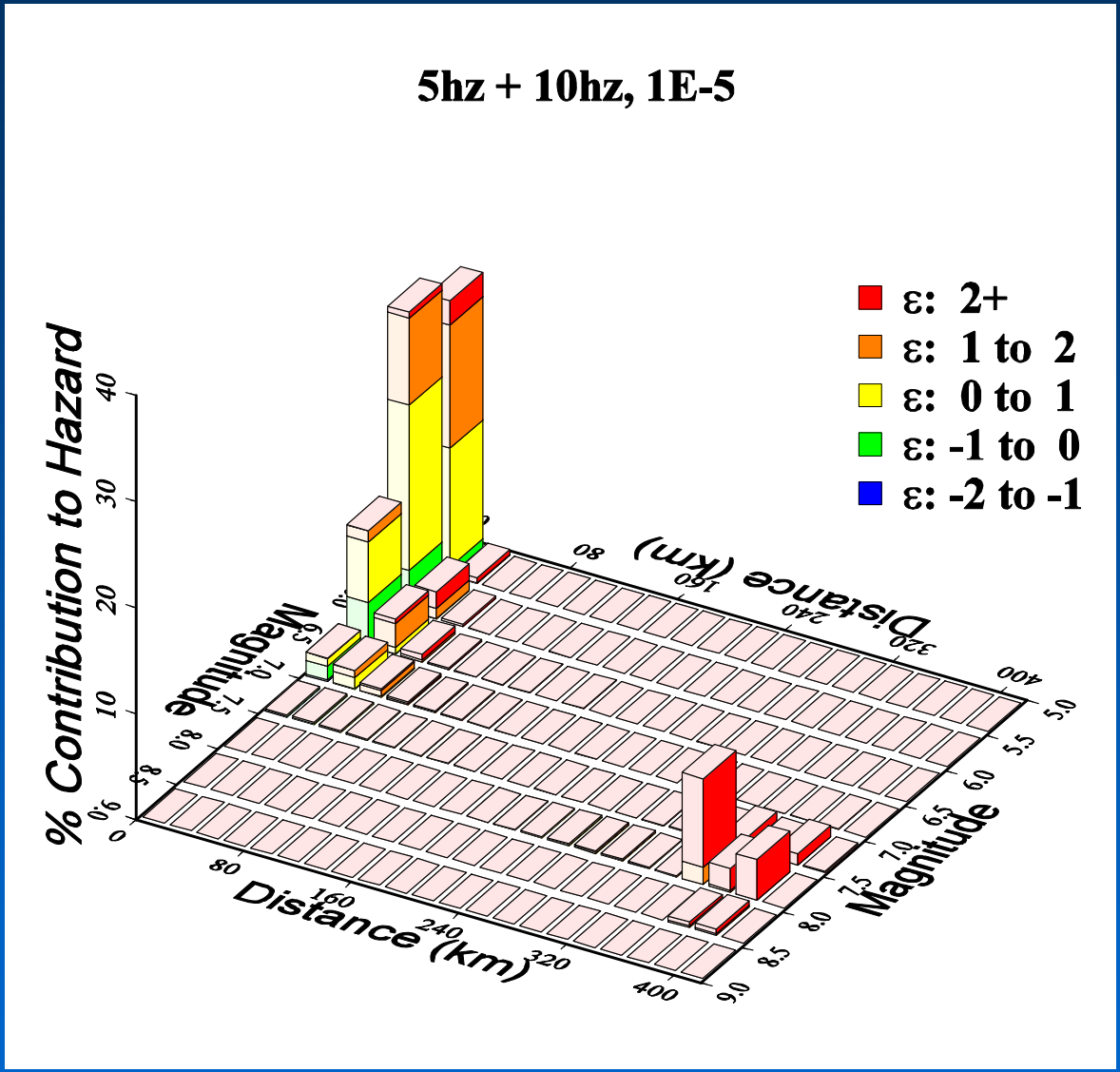
Mean 10^{-5} deaggregation, average of 5 and 10 Hz



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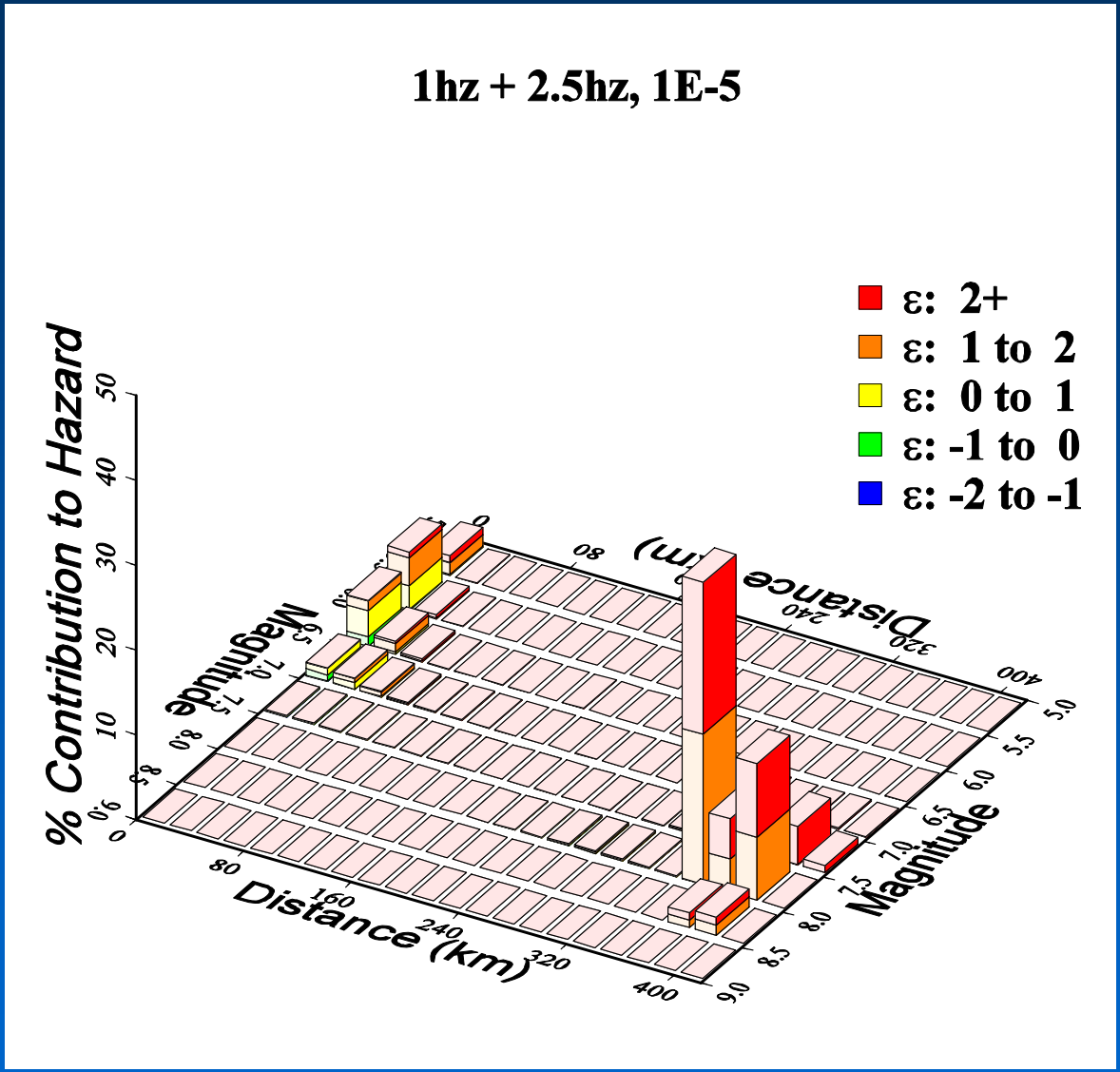
Mean 10^{-5} deaggregation, average of 1 and 2.5 Hz



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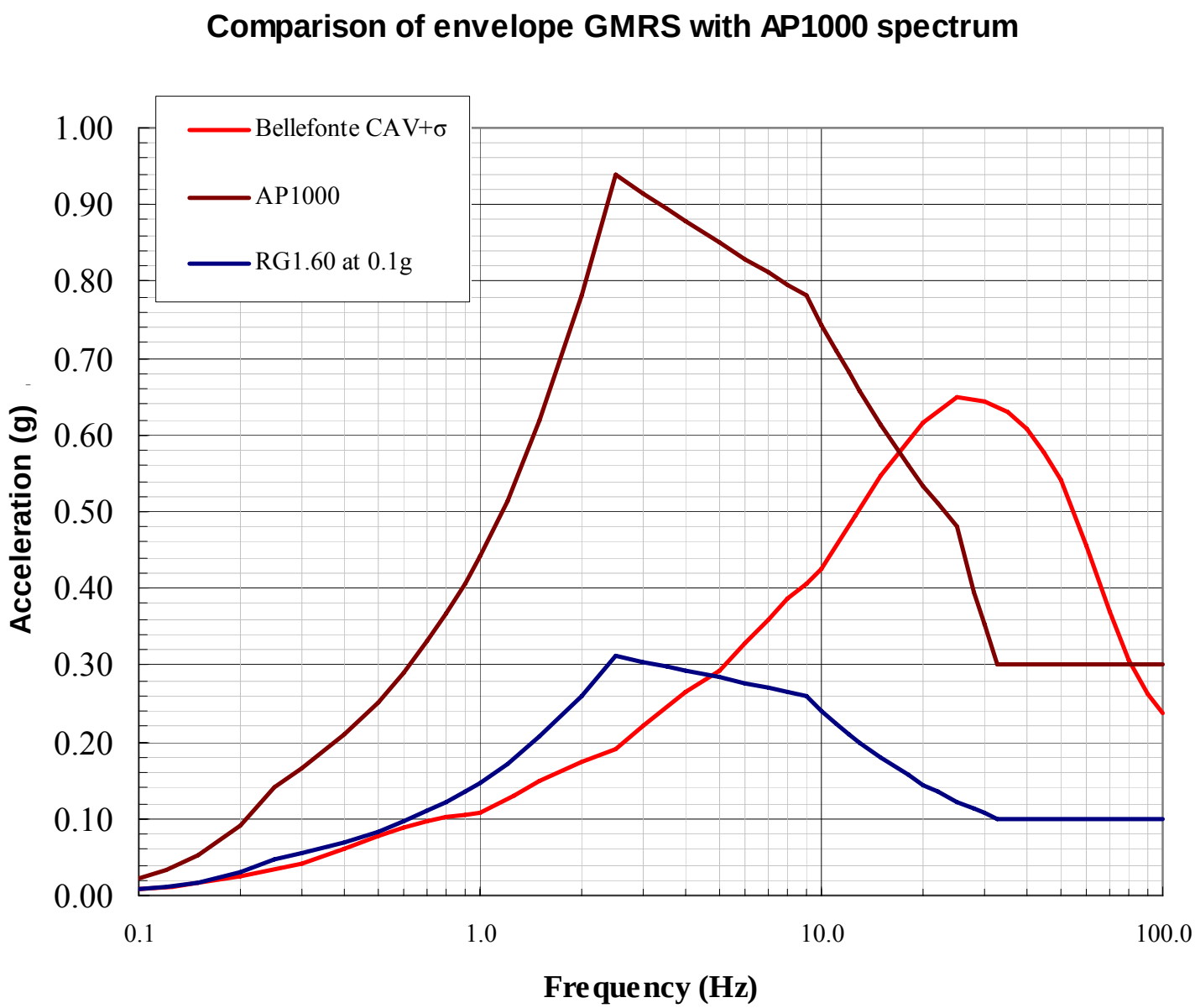

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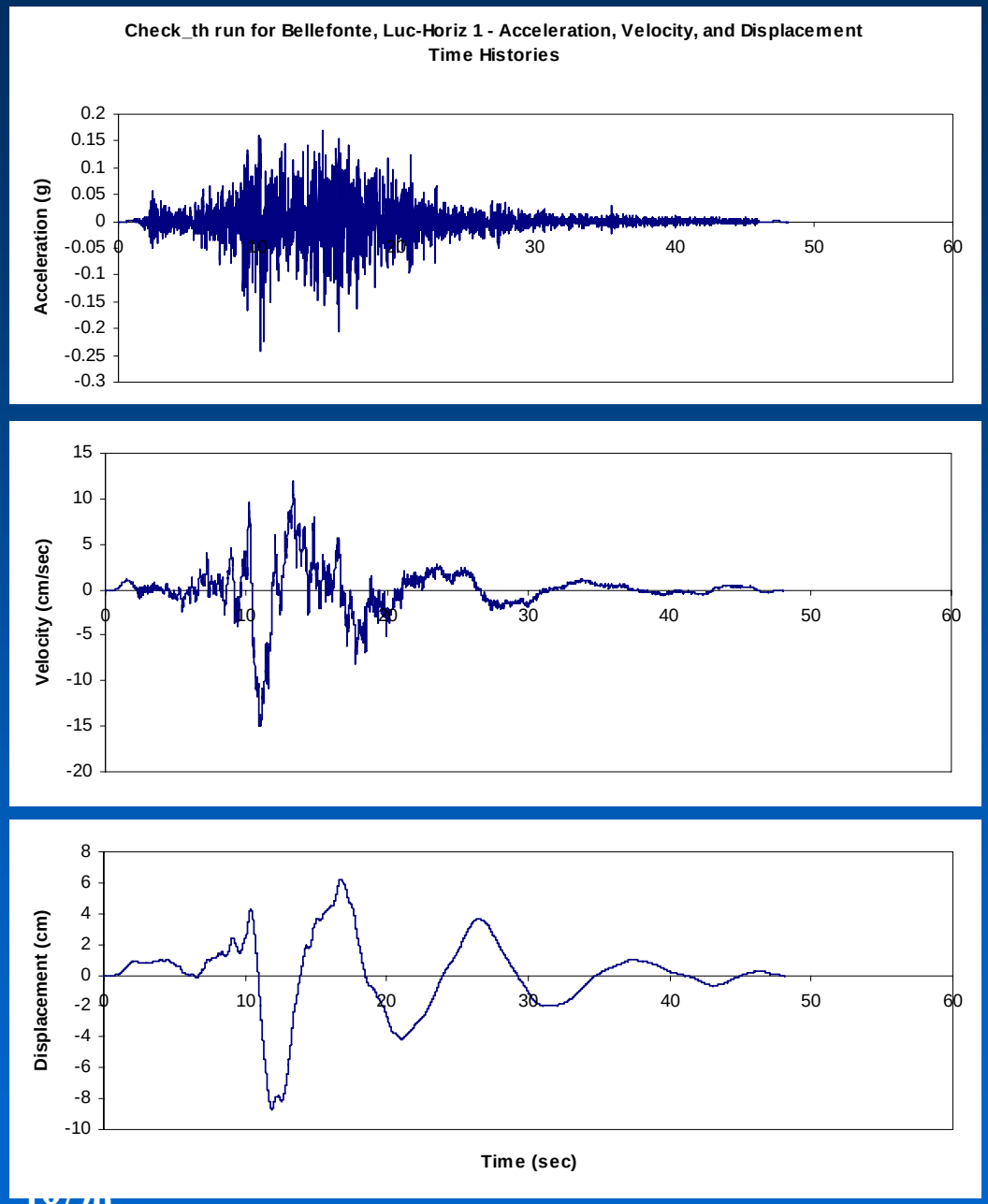

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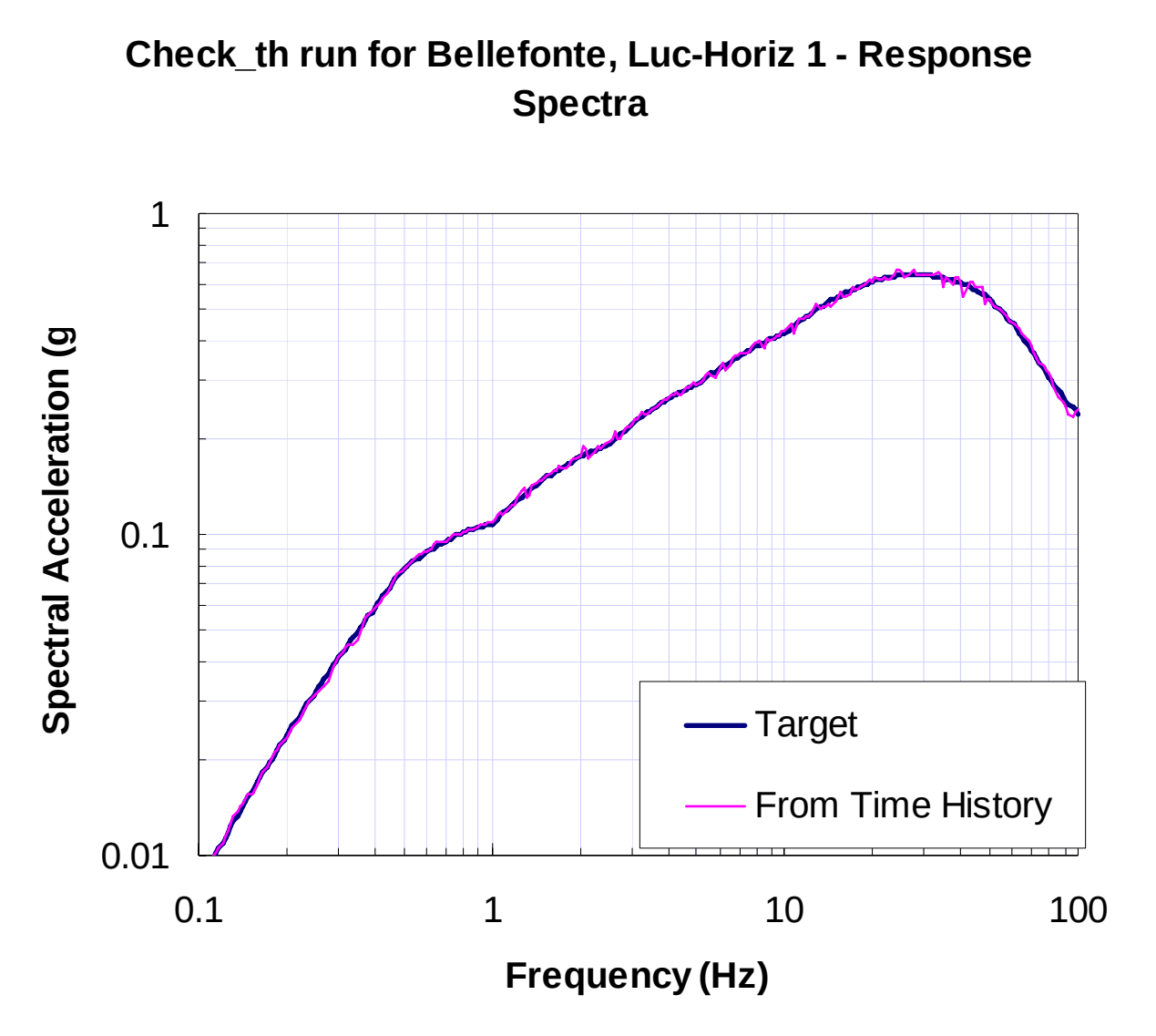
Target and fitted response spectra, component H1



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Summary

1. Hard rock Bellefonte spectrum envelops other hard rock spectra
2. Envelope spectrum uses CAV and revised σ
3. Sensitivity results will determine effect of V_s<9200 fps rock at each site
4. Any significant rock amplification for V_s<9200 fps will be integrated into hazard analysis with Approach 4
5. Final envelope spectrum will include any significant rock amplification.

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