

Workshop Objectives & Agenda

SCEC Ground Motion Simulation Validation (GMSV) Technical Activity Group (TAG) Workshop

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SCEC GMSV TAG

- Developing and implementing testing/rating methodologies via collaboration between ground motion modelers and engineering users
- Focused on validation for use in “engineering applications,” such as ...
 - development of Ground Motion Prediction Equations (GMPE’s)
 - Probabilistic Seismic Hazard Analysis (PSHA)
 - geotechnical Site Response Analysis (SRA)
 - structural Nonlinear Response History Analysis (NRHA) of buildings

SCEC GMSV TAG

Not focused on ...

- verification (comparison against theoretical predictions, as opposed to observations)
- comparisons of seismograms, as opposed to ...
 - elastic response spectra
 - inelastic response spectra
 - response of geotechnical systems
 - multi-degree-of-freedom building response
 - other “engineering metrics”
- validation of individual simulated ground motions

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Workshop Objectives

- 1) Share recent progress/planning of GMSV TAG projects
- 2) Discuss ideas for future GMSV TAG projects
- 3) Obtain feedback on GMSV TAG portion of 2014 SCEC Science Collaboration Plan

Workshop Agenda

13:00-13:05	Welcome and Overview of Various SCEC Validation Efforts	<i>Tom Jordan</i>
13:05-13:15	Workshop Objectives and Agenda	<i>Nicolas Luco</i>
GMSV TAG Efforts for SCEC SEISM Project		
13:15-13:30	Focus of "GMSV-SEISM" Efforts	<i>Nicolas Luco</i>
13:30-13:50	Validation for Engineering Analysis Using Simple and Robust Ground Motions Parameters	<i>Lynne Burks Jack Baker</i>
13:50-14:10	Validation for Building-Code Nonlinear Response History Analysis	<i>Farzin Zareian Peng Zhong Iunio Iervolino</i>
14:10-14:30	Validation Approach for Application of Simulated Ground Motions to Duration-Sensitive Geotechnical Systems	<i>Kioumars Afshari Jonathan Stewart</i>
14:30-14:55	Discussion of "GMSV-SEISM" Efforts	<i>All</i>
14:55-15:10	<i>Break</i>	
Other GMSV TAG Efforts		
15:10-15:30	Overview of GMSV TAG Efforts Presented Elsewhere	<i>Sanaz Rezaiean</i>
15:30-15:45	Validation of Earthquake Simulations and Their Effects on Tall Buildings Considering Spectral Shape and Duration	<i>Ting Lin Greg Deierlein</i>
15:45-16:00	Validation of Ground Motion Simulations for Seismic Slope Stability	<i>Ellen Rathje</i>
16:00-16:15	Support of SCEC Committee for Utilization of Ground Motion Simulations (UGMS)	<i>C.B. Crouse</i>
16:15-17:00	Discussion of Future GMSV TAG Efforts	<i>All</i>
17:00	<i>Adjourn</i>	

[Return to 2013 SCEC Annual Meeting](#)

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Draft 2014 SCEC RFP

- Develop validation methodologies that use ... relatively simple metrics ...
- Develop ... methodologies that use common models of structures of interest ... for particular engineering applications ...
- Develop ... methodologies for the use of ground motion simulations in developing probabilistic and deterministic hazard maps for building codes ...
- Research important ground motion or structural response parameters and statistics that should be used in validation ... Demonstrate similarities and differences between otherwise parallel validation tests/ratings using these ... parameters.
- Demonstrate validation methodologies with ... deterministic and stochastic methods above 1 Hz
- Develop ... methods for either i) adjusting ground motion time series by the Broadband Platform to account for local site conditions at historical earthquake stations, or ii) de-convolving recorded ground motion time series to a reference site condition

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