

Ground Motion Selection and Modification (GMSM) Working Group
10am – 2pm July 17, 2006
PEER Headquarters

10 - 11:15: Progress on analyses of OpenSees and other nonlinear models:

1. Erol: List of models with their characteristics including: period, age of buildings, structural systems, pushover results if available, etc.
2. Christine/Curt: List of models with their characteristics including: period, age of buildings, structural systems, pushover results if available, etc.
3. Polask: List and characteristics of models available from Krawinkler's group.
4. Suggestion (Yousef) –let's discuss to decide: For each building, have a single sheet to include characteristics of the building to be analyzed, including: Plan and elevation views, year of design, applicable building code (e.g., UBC97, IBC2000, ...), T1, T2, T3 (and their mass participation factors), design base shear, expected global ductility, pushover curve (if any), etc.
5. All: Preliminary results if available.
6. Yousef/Frank/Erol: Progress on San Diego Supercomputer.
7. Tom: Plan for analysis of bridges.
8. Norm, Brian and Jennie: Plan for analysis of dams (from PG&E or SinoTech)?
9. Discussion of response parameters to be calculated in the analyses.

11:15 – 12: List and summary of ground motion selection and modification methods:

Nico and Christine will present the list of methods. The group will make comments on changes or additions. The power point presentation is attached to the July 11, 2006 email for preliminary changes and additions.

12-12:30 Lunch

12:30 – 1:15: Process of computing “true” structural response subjected to for 98 records (M7 Rrup10 bins)

Continue discussion from last meeting. Suggestion (Jennie):

1. A suite of records from Mw6.75-7.25, Rrup 0-10km events was developed. A total of 98 records were distributed to the group the day of the meeting.
2. The suite will be run through each model using scale factors of 1, 2, 4 and 8.
3. A model of the desired structural response parameter using properties of the input time series (e.g. $Sa(T_1)$, $Sa(2T_1)$, duration, etc.) will be developed.
4. The model will be checked to ensure that there is no bias with scale factor.
5. Models for the record properties that affect response, and correlations between record properties will be developed using the full PEER database.
6. The joint pdf of record properties as a function of magnitude and distance will be calculated.
7. Using the joint pdf of record properties and the model for building response based on those record properties the pdf of structural response for a M7 Rrup 10 event will be calculated.

The point of comparison for the ground motion selection procedures will be discussed as to whether it should be conditioned on the design spectrum or not.

1:15 – 2: Working Group members present on-going research