PEER WORKSHOP ON

SEISMIC RISK ASSESSMENT AND MANAGEMENT OF TRANSPORTATION NETWORKS

Objective

To identify needs, challenges and opportunities for research in seismic risk assessment, mitigation and management of transportation systems

Approach

While the focus will be on transportation networks, we will also discuss other lifelines because:

- Transportable concepts and methods
- Interaction between lifelines
- Future program opportunities

Schedule

8:30-9	Breakfast (325)
9-10:30	Technical presentations (542)
10:30-11	Coffee break (325)
11-12:30	Technical presentations (542)
12:30-1:30	Lunch (325)
1:30-3	Breakup sessions (325+542)
3-3:30	Coffee break (325)
3:30-5	General discussion (542)

Issues

- What are useful formulations of infrastructure system performance before, during and after an earthquake? What are the relevant direct and indirect loss metrics?
- How can these metrics be incorporated in performance based engineering for transportation networks?
- What are the major sources of uncertainty in assessing infrastructure system performance?

Issues

- What are the modeling and computational challenges involved in assessing infrastructure system performance under conditions of uncertainty?

- How does the geographically distributed nature of infrastructure systems distinguish their performance relative to systems located at a single site, e.g., a nuclear power plant? What additional considerations does the geographically distributed nature mandate?

Issues

- What types of seismic hazard are relevant to geographically distributed infrastructure systems?

- Discuss the modes of interdependence between various infrastructure systems subject to earthquakes.

Issues

- Imagine a Decision Support System (DSS) to aid decision-making for seismic retrofit, for emergency response to earthquakes, or for recovery after an earthquake. Enumerate some of the desired elements of such a DSS in each case.

- How can IT (e.g., the Internet, GIS, visualization tools, cell phones, aerial photographs) assist in post-earthquake response and recovery of an infrastructure system?

Group

- **Group 1 (542):**
- Samer Madenat - lead
- Leonardo Duenas-Osorio – scribe
- Jack Baker
- Michelle Bensi
- Xuesong Zhou
- Denny Fong

- **Group 2 (325):**
- Tom Shantz – lead
- Stu Werner – scribe
- Masanobu Shinozuka
- Mike Lepech
- Junho Song
- Aditya Medury
- Nirmal Jayaram