

# **PEER WORKSHOP ON SEISMIC RISK ASSESSMENT AND MANAGEMENT OF TRANSPORTATION NETWORKS**

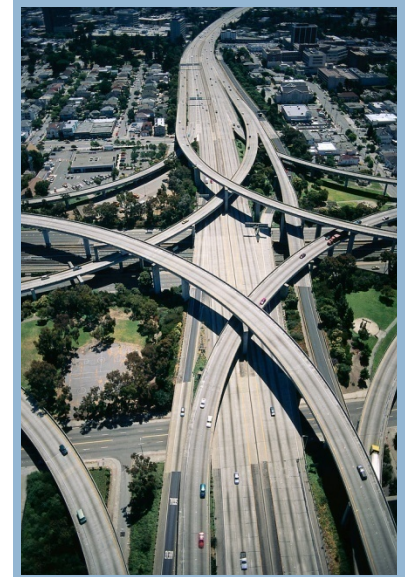
March 18, 2009

PEER Workshop on Transportation Networks

# Objective

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

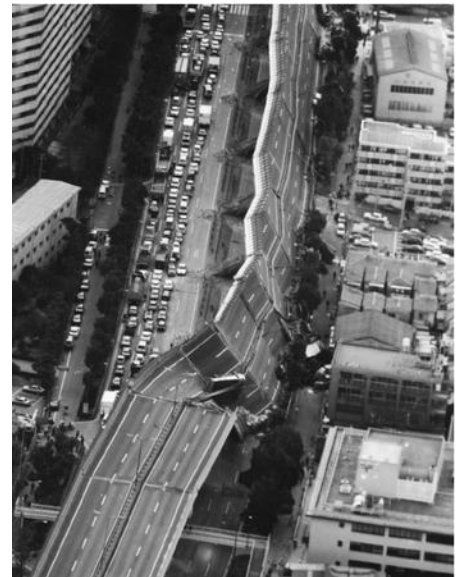
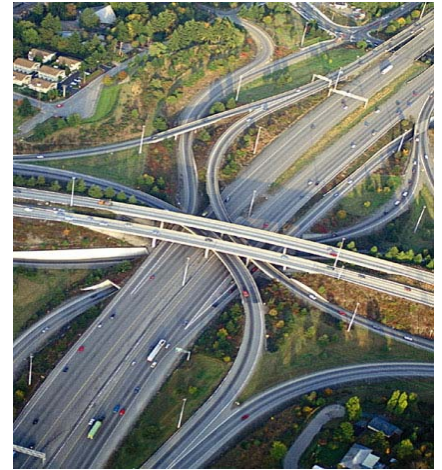


# Approach

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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

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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

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- 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

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- 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

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- 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

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- 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

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- **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