

# Imperial College Geotechnics Seminar

## Seismic Design of Pile Foundations for Liquefaction Effects

Prof. Ross Boulanger,  
University of California, Davis

Wednesday March 26 2008

Skempton Building  
Imperial College London

Room TBC

6:00 pm

Procedures for the seismic design of pile foundations for liquefaction effects are presented with emphasis on the conditions relevant to bridges. Two local subsystems for a bridge are discussed in detail: (1) pile groups in laterally spreading ground away from the abutments, and (2) pile groups at the abutments where the restraining or "pinning" effects of the piles and bridge superstructure can be advantageous. The recommended design procedures involve equivalent static analyses using beam on nonlinear Winkler foundation models. Guidance for these design procedures was derived from a combination of dynamic centrifuge model tests and associated nonlinear dynamic finite element studies. The design procedures, their basis, and other issues for design of bridges for liquefaction effects are discussed.

*All are welcome.*

*Prior Registration not necessary.*

*Please contact Dr. Catherine O'Sullivan ([cath.osullivan@imperial.ac.uk](mailto:cath.osullivan@imperial.ac.uk))  
with any queries.*