



GEOTECHNICAL
ENGINEERING

STUDENT
ORGANIZATION

GESO Guest Speaker
Wednesday, October 9th, 2013
12 PM – 1 PM
Yeh Center Room 3310

“Developing time histories for seismic design and risk assessment: How much variability should be included?”

Dr. Norman Abrahamson
Pacific Gas and Electric Company
Adjunct Professor at the University of California at Berkeley

Abstract

Variability in ground motions is one of the constant issues in seismic design and risk assessment. How much variability should there be in the spectral accelerations? Does including variability in the time histories double count the variability already in the UHS? What should be the median variability of parameters other than the spectral shape such as duration, PGV, and Arias intensity? We now have a "correct" answer using conditional spectra, but that requires a large number of time histories (about 500). The issue is how to best simplify this to a small number of time histories and still capture the key features so that this risk is acceptably small.

Biography

Dr. Abrahamson has been involved in strong motion seismology for 18 years. He has extensive experience in the practical application of seismology to the development of deterministic and probabilistic seismic criteria (response spectra, and/or time histories) for engineering design or analyses. He has been involved in developing design ground motions for hundreds of projects including dams, bridges, nuclear power plants, nuclear waste repositories, water and gas pipelines, rail lines, ports, landfills, hospitals, electric substations, and office buildings. About 3/4 of these projects have been in the Western US and the other 1/4 have been in the Eastern US or outside of the US.

As always, food and refreshments will be provided.

Everyone is welcome!!