



ΕΛΛΗΝΙΚΗ
ΕΠΙΣΤΗΜΟΝΙΚΗ
ΕΤΑΙΡΕΙΑ
ΕΔΑΦΟΜΗΧΑΝΙΚΗΣ
& ΓΕΩΤΕΧΝΙΚΗΣ
ΜΗΧΑΝΙΚΗΣ

ΔΙΑΛΕΞΗ

την Δευτέρα, 14 Δεκεμβρίου 2009, ώρα 19:00

στην

Αίθουσα Εκδηλώσεων της

Σχολής Πολιτικών Μηχανικών ΕΜΠ

στην Πολυτεχνειούπολη Ζωγράφου

«On Seismic Design of Retaining Structures»

από τον

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Starting with the Loma Prieta Earthquake in 1989 there has been an increased awareness of the potential magnitude of strong ground motions produced by major tectonically active faults. An important consequence has been the gradual tightening of code requirements for the design of retaining structures suggesting that these structures should be designed to much higher levels of seismic loading than assumed in the past. However, at the same time, field observations of these structures generally show excellent behavior inconsistent with the analytical predictions. The objective of this presentation is to introduce field observations coupled with experimental, geotechnical centrifuge model data showing that the failure mechanisms typically assumed in many of the current design methods do not match the actual behavior. More importantly, the experimental data suggest that the predicted design forces typically overestimate the actual demands on the structures, leading to very conservative designs. Thus, there is a need for a rational, observation based re-evaluation of the basic assumptions made in the current designs and for the development of a new generation of design procedures based on the best understanding of the actual failure mechanisms.

NICHOLAS SITAR

Prof. Sitar received his undergraduate degree in Geological Engineering from the University of Windsor in Windsor, Ontario in 1973, and his Ph.D. in Geotechnical Engineering from Stanford University in 1979. After receiving his Ph.D., he spent two years teaching in the Geological Engineering Program at the University of British Columbia in Vancouver, B.C. He joined the faculty in GeoEngineering at the University of California at Berkeley as an Assistant Professor in 1981 and was promoted to Professor in 1990. He served as the Director of the University of California Earthquake Engineering Research Center from 2002 to 2008.

His interest in geotechnical earthquake engineering and seismic slope stability goes back to the 1976 Guatemala Earthquake. Since then he has participated in a number of studies, including the post-earthquake reconnaissance of the Loma Prieta, Northridge, and Kobe, Chi Chi, Denali and Wenchuan earthquakes.

He has authored and co-authored over 160 publications in geotechnical engineering, engineering geology, groundwater and groundwater remediation. He has received a number of awards for his work, including the Huber Research Prize from the American Society of Civil Engineers, the Douglas R. Piteau Award from the Association of Engineering Geologists, and the Presidential Young Investigator Award from the National Science Foundation.