



GEOTECHNICAL  
ENGINEERING

STUDENT  
ORGANIZATION

**GESO Roundtable Meeting**  
**Tuesday, February 26<sup>th</sup>, 2013**  
**11 AM, Yeh Center Room 3310**

**GEO PREDICTION TEAM PRESENTATION**

Presented by: Navid Jafari and Aaron Leopold

The objective of the GeoPrediction competition is to develop an accurate prediction of geotechnical behavior given detailed information regarding subsurface, boundary, and initial conditions, as well as the geotechnical/structural/hydraulic loading. In this year's competition for the 2013 Geo-Congress, the UIUC GeoPrediction team predicted the groundwater table conditions at the time of a slope failure. This presentation discusses the input data for the problem including boring logs, standard penetration test data, cone penetration test data, inclinometer data, laboratory index test results, and ground surface elevations used in predicting the groundwater table.

**GEOCONGRESS CONFERENCE PAPER**

**“Comparison of Liquefaction Triggering Methods for Sloping Ground  
Using Two Flow Failures from the 2010 Haiti Earthquake”**  
**by Alfonso Cerna-Díaz and Scott M. Olson, P.E., M.ASCE**

Presented by: Alfonso Cerna-Díaz

Evaluating liquefaction (both triggering and post-triggering) of sloping ground remains a difficult task for practicing engineers. For triggering, two approaches are available: (1) the cyclic stress method modified with corrections for high overburden stress and static shear stresses; and (2) the yield strength ratio method. Similarly, for post-triggering stability analysis, two general approaches are available to estimate the liquefied shear strength: (1) correlations for residual strength; and (2) correlations for liquefied shear strength ratio. These triggering and post-triggering methods were applied to two slope failures induced by the Mw 7.0 Haiti (2010) earthquake. The analyses suggest that the yield and liquefied strength ratio approaches provided factors of safety consistent with observed performance. In contrast, methods using the cyclic stress approach and residual shear strength provided results that were consistent with only one of the two case histories described in this paper.

*As always, food and refreshments will be provided.*

*Everyone is welcome!!*