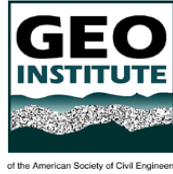


GEOTECHNICAL GROUP LOS ANGELES SECTION – ASCE



MEETING NOTICE Wednesday, June 15th, 2016

LIQUEFACTION RESISTANCE OF AGED SOILS

Dr. Ronald D. Andrus

Professor, Clemson University, Clemson, South Carolina

SOCIAL HOUR: 5:30 p.m.

DINNER: 6:30 p.m.

PROGRAM: 7:30 p.m.

PLACE: Stevens Steak House

5332 Stevens Place, City of Commerce

Southwest Corner of I-5 & Atlantic Boulevard

PRICE:

\$35 with reservation in-advance;

\$40 at the door;

Students: Free with valid Student ID

CONTACT: Sharid K. Amiri sharid_amiri@dot.ca.gov

**Please make reservations (<http://lagooinstitute.com/>) prior to 12 noon,
Wednesday, June 8.**

ABSTRACT:



Results of laboratory and field investigations indicate that the liquefaction resistance of clean sands generally increase about 12-13% per log cycle of time; and commonly used liquefaction triggering charts for clean sands correspond to an average age of about 23 years. Because age (or degree of diagenesis) of natural soil deposits is often difficult to accurately determine, a proxy variable called measured to estimated shear-wave velocity ratio is proposed. Liquefaction potential of aged soil deposits in Charleston, South Carolina, based on the 1886 Charleston earthquake ($M \sim 7.0$) are characterize using the liquefaction potential index developed by Iwasaki et al. and cone penetration test profiles. To match computed liquefaction potential index values with the observed field behavior following the 1886 earthquake, a deposit resistance correction factor of 1.8 is applied to cyclic resistance ratios calculated for the 100,000-year-old Wando Formation. No corrections are needed for sites associated with the younger deposits and the 200,000-year-old Ten Mile Hill beds which lie close to the source northwest of Charleston. Initial findings from Christchurch, New Zealand are also discussed. Some information needs for improved evaluations of aged soils are identified.

BIO:

Dr. Ronald D. Andrus is a professor in the Glenn Department of Civil Engineering at Clemson University in Clemson, South Carolina. Prior to joining Clemson University, Dr. Andrus served as a research civil engineer for the U.S. Department of Commerce at the National Institute of Standards and Technology in Gaithersburg, Maryland. He received his B.S. from Brigham Young University in 1983, M.S. from Brigham Young University in 1986, and Ph.D. from The University of Texas at Austin in 1994. Dr. Andrus' research interests are in the areas of geotechnical earthquake engineering, soil dynamics, laboratory and in-situ testing, site characterization, and ground improvement.