



Association of Environmental and Engineering Geologists
California Central Coast Chapter, Southern California Section

www.aegsc.org/chapters/centralcoast

Robert J. Urban, President
Anthony Schuetze, Vice President
Darryl Berberi-Hill, Student Liaison

Andy Evans, Treasurer
Natalie Williams, Secretary

MAY MEETING NOTICE

**THE NEES PERMANENTLY INSTRUMENTED
FIELD SITES IN CALIFORNIA**

By

Dr. Sandra Seale
Project Scientist, UCSB Institute for Crustal Studies

Wednesday, May 19, 2010
Me-N-Ed's Pizza, Santa Maria
(*RSVP/Directions below*)

6:00 PM – 7:00 PM Social Hour
7:00 PM – 8:00 PM Presentation

Chapter Chair Message

*Greetings CA Central Coast Chapter:
I am pleased to announce the continued revival of our chapter! We will be meeting in Goleta this month, so please note the change in meeting location. We will resume meeting in Santa Maria next month. I look forward to seeing you at the upcoming meeting!*

*Best of regards,
Robert J. Urban
Chapter Chair
AEG CA Central Coast Chapter*

Announcements

Please email announcements to Nwilliams.geol@gmail.com, thank you.

AEG'S 53rd ANNUAL MEETING

**September 20 – 25, 2010 ~
Francis Marion Hotel
Charleston, South Carolina**

Technical session topics include coastal issues, landslide/slope stability, seismic hazards, and hydrogeology. Field trips include a tour of the southern Appalachians and environmental remediation sites. View a full list of topics and field trips at www.aegweb.org.

Abstract

Observations of Pore Pressure Response to Strong Ground Motion at the NEES Permanently-Instrumented Field Sites

By

Dr. Sandra Seale

Project Scientist, UCSB Institute for Crustal Studies

The Wildlife Liquefaction Array (WLA) and the Garner Valley Downhole Array (GVDA) in California have been recording ground motions and pore pressure from earthquakes for more than a decade. Both sites have liquefaction potential, with silty clay layers at the surface over layers of saturated silty sand. The sites have accelerometers located at the surface and in boreholes at various depths within and below the liquefiable layers. Multiple pressure transducers are also located within the soft near-surface layers. The two sites are producing a large data set that includes records from earthquakes in the magnitude 4 to 7 range, with peak accelerations of $\sim 10\%g$, where nonlinear response becomes important. At these acceleration levels, we see pore pressure start to build up in the saturated layers at both WLA and GVDA. We observe a sudden increase in pore pressure associated with the first arrival of the S-wave, followed by a slow decay back to the pre-event level. The pore pressure increase in most cases is largest at the top of the saturated layers. Four events from the Obsidian Buttes swarm of August 2005 produced this effect at WLA. Five events since 1999 have caused the jump in pore pressure at GVDA. The 4 April 2010 M7.2 Sierra el Mayor event in Mexico produced a remarkable record increased pore pressure at the WLA site. These data are very interesting because they show the increase in pore pressure in a liquefiable layer and represent the onset of nonlinear material behavior. Using the accelerometer data, we will show analysis of the correlation between the pore pressure response and the incident ground motion excitation. In particular the particle motions and stress-strain regime responsible for generating the excess pore pressure. This analysis is helping to improve our understanding of the physical process that drives liquefaction and nonlinear soil response.

Please mark your calendar for our next upcoming Chapter Meeting:

June 30, 2010 – Dr. Anthony Garcia
-Geomorphology of the Central Coast Ranges

Directions to Meeting

This month's meeting will take place at Rusty's Pizza Parlor in Goleta. Social hour begins at 6 pm; the meeting begins at 7 pm.

For more information or to be added to the CA Central Coast Chapter email list, please contact Natalie Williams via email at Nwilliams.geo@gmail.com.

Location:

Rusty's Pizza Parlor, 270 Storke Road, Goleta, California

Directions:

Driving Northbound on Highway 101:

1. Exit on Storke Road;
2. Turn left on Storke Road;
3. Turn left at the first stop light past Hollister Road;
4. Rusty's is on the left.

Driving Southbound on Highway 101:

1. Exit on Storke Road;
2. Turn right on Storke Road;
3. Turn left at the first stop light past Hollister Road;
4. Rusty's is on the left.

Donation/Cost

AEG members = \$15; non-AEG members = \$20; Students = \$5

Please: If you plan on attending the meeting, please email Nwilliams.geo@gmail.com a confirmation of your attendance by the Tuesday preceding the meeting date. This greatly helps in ordering the food for attendees. However, if you forget to email, please still do attend the meeting. Thank you.

JOB POSTINGS

If you would like to place a job announcement, please email the listing to Nwilliams.geo@gmail.com, thank you!

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