

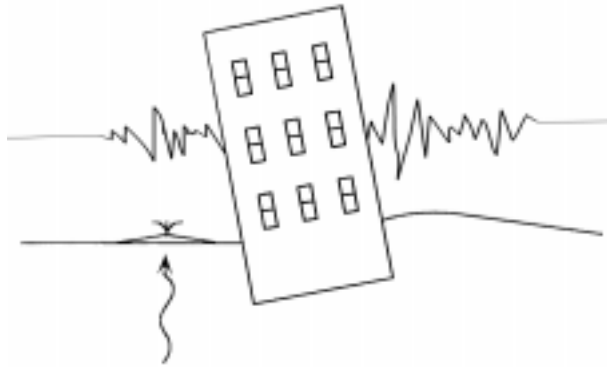
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East Coast Seismicity, Ground Motions and
Liquefaction Evaluation Seminar
April 25, 2000

East Coast

Seismicity, Ground Motions and Liquefaction Evaluation Seminar



Tuesday, April 25, 2000

Washington Dulles Airport Marriott
Dulles, Virginia



VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

CGPR

Center for Geotechnical Practice and Research
and
The Division of Continuing Education

Seminar Schedule and Topics

Tuesday, April 25, 2000

7:30 AM Registration and Continental Breakfast

8:15 AM Introduction and Welcome

8:30 AM MORNING SESSION

Earthquake Issues and Effects - Martin

- General Issues & East Coast Earthquakes
- Effects (e.g. slope instability, liquefaction, soil amplification)

Determination of Ground Motions - Martin

- Magnitude, Acceleration, Duration
- Time History

Earthquake Demand - Cyclic Stress Ratio and Its Determination - Mitchell

- Simplified Analysis
- Ground Response Analyses

Soil Resistance - Cyclic Resistance Ratio - Mitchell

- Standard Penetration Test
- Cone Penetration Test

12:15 - 1:30 PM Lunch (provided)

1:30 PM AFTERNOON SESSION

Soil Resistance – Cyclic Resistance Ratio (Cont.) - Mitchell

- Shear Wave Velocity
- Becker Penetration Test

Earthquake Magnitude Scaling Factors, and Other Factors - Mitchell

- K_{σ}
- K_{α}
- Seismic Factors

Building Codes - Martin

- Recent Developments
- Sources of Information

Worked Example - Martin and Mitchell

4:45 PM Wrap-Up

5:00 PM Adjourn

About the Course and Who Should Attend

Many areas in the Eastern United States are now considered to be at seismic risk. Seismic designs are now being mandated and implemented for both retrofit of existing

infrastructure and new construction. Proper understanding and characterization of seismicity, probable ground motions, and ground failure risks are essential elements in this process.

This course covers the characteristics and distributions of earthquakes in the Eastern U.S., methods for estimating the potential shaking intensity and duration, and recent developments in building codes and sources of information for engineering design. Liquefaction potential assessment is the first step in evaluating the risk for foundation and structural failures as a result of loss of bearing capacity or/and lateral spreading of the ground. The latest procedures for evaluating the liquefaction potential at specific sites will be presented. Emphasis is on fundamentals, information sources and simplified methods that can be used in engineering practice. The course focuses primarily on geotechnical issues, and is presented in such a way that the material is useful for civil engineers and others who have a need for understanding the important elements of earthquake engineering.

A comprehensive set of course notes will complement and supplement the material presented. The liquefaction potential assessment portion of the course is based on the recent consensus document from the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils.

Participants will receive 0.7 Continuing Education Units (CEUs) for successful completion of this course.

Featured Speakers

Dr. James K. Mitchell, Sc.D., P.E.

Dr. Mitchell, University Distinguished Professor, Emeritus at Virginia Tech and Co-Director of the Center for Geotechnical Practice and Research, has more than 40 years' experience in the teaching, research and practice of geotechnical engineering. His research has been in the areas of soil properties and behavior, soil stabilization and ground improvement, environmental geotechnics and in-situ testing for site characterization and soil property determination. In recent years he has focused his expertise in the areas of geotechnical earthquake engineering problems, with special emphasis on soil liquefaction and ground improvement for mitigation of liquefaction risk. He serves as a consultant to numerous government agencies and geotechnical consulting firms in the U.S. and other

countries.

Dr. James R. Martin, II, Ph.D.

Dr. Martin, Associate Professor at Virginia Tech and Co-Director of the newly formed research center ECSUS, the Earthquake Engineering Center for the Southeastern U.S., has more than 10 years' experience in teaching, research and practice of geotechnical engineering. His research has been mainly in the area of earthquake engineering and soil improvement. Recent major research projects have been in the area of soil liquefaction, development of geographical information systems for seismic hazard analyses, seismic hazard assessments of the Eastern and Central U.S., and studies of the recent large earthquakes in Turkey. Dr. Martin has served as a private engineering consultant to more than 30 different private engineering firms and government agencies.

How to Register

The fee is \$250 for CGPR members and \$350 for non-members and includes seminar notebook and materials, continental breakfast, continuous refreshment breaks, lunch and a certificate awarding 0.7 CEUs. To register, please complete the attached form and return with payment by April 11, 2000. You may register electronically by accessing our secure server at: <http://www.conted.vt.edu/earthquake.htm>. Faxed registrations are also accepted for credit card registrations at (540) 231-3306.

Note: Payment of registration fees is required prior to program attendance. Registration will be processed when payment is received.

Refund Policy: Requests for refunds are honored if received four full working days prior to the seminar. However, substitutions are accepted at any time.

Location and Lodging

The seminar is held at the Washington Dulles Airport Marriott, 45020 Aviation Drive, Dulles, Virginia. Should you need lodging arrangements, please contact the hotel directly at (703) 471-9500.

For More Information

For more information about the content of the seminar, please contact Charles Smith, CGPR at (540) 231-5052 or cjs@vt.edu. For information about registration, contact the Division of Continuing Education's Conference Registrar at (540) 231-5182.

Registration

East Coast Seismicity, Ground Motions and Liquefaction Evaluation Seminar

Tuesday, April 25, 2000

Register on-line at:

<http://www.conted.vt.edu/earthquake.htm>

Please print or type-complete separate form for each participant.

Name _____

Social Security Number _____

Position/Title _____

Employer _____

*Employer's FID# _____

Address _____

City _____

State _____

Zip _____

Office Phone _____

Fax _____

Email _____

Signature _____

*Necessary to process a refund payable to any company, agency or government

Fees: \$250 for CGPR members
\$350 for Non-members

Method of Payment:

Check enclosed.

Make check payable to: Treasurer, Virginia Tech CE

Credit Card MasterCard VISA AmEx

Cardholder Name _____

Card No. _____ Exp. Date _____

Signature _____

Return by April 11 to (no staples, tape, or paper clips, please):
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810 University City Blvd., Suite D, Mail Code 0272,
Virginia Tech, Blacksburg, VA 24061,
phone (540) 231-5182, fax (540) 231-3306 (for credit card registrations only)