



Vancouver Geotechnical Society

A Local Section of the Canadian Geotechnical Society

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NOTICE OF UPCOMING DINNER PRESENTATION

CANADIAN GEOTECHNICAL SOCIETY

2013 FALL CROSS CANADA LECTURE TOUR

MONDAY, OCTOBER 21, 2013

SUBJECT: Evaluating the Seismic Coefficient for Slope Stability and Retaining Wall Design

SPEAKER: Edward Kavazanjian, Jr., Ph.D., P.E., Ph.D., NAE

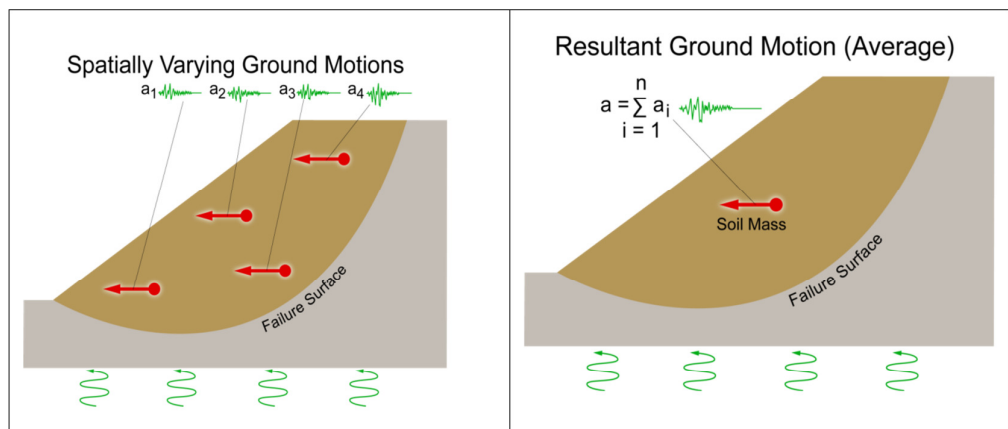
Edward Kavazanjian, Jr., Ph.D., P.E., D.GE, NAE, is the Ira A. Fulton Professor of Geotechnical Engineering in the School of Sustainable Engineering and the Built Environment at Arizona State University in Tempe, Arizona, USA. He joined the faculty at Arizona State University in August 2004 after 20 years as a practicing geotechnical engineer. Prof. Kavazanjian has Bachelor and Master of Science degrees in Civil Engineering from M.I.T. and a Ph.D. in Geotechnical Engineering from the University of California at Berkeley.

Prof. Kavazanjian was elected to the US National Academy of Engineering in February 2013 in recognition of his work on design and construction of landfills and waste containment systems and on geotechnical earthquake engineering. Prof. Kavazanjian currently serves on the Board of Earth Sciences and Resources (BESR) of the National Research Council (NRC) of the National Academies of Science and Engineering as chair of the Committee on Geotechnical and Geological Engineering. He is a Past-President of the Board of Governors of the Geo-Institute of the American Society of Civil Engineers (ASCE). He is recipient from ASCE of the 2009 Ralph B. Peck Award for his published case history contributions to landfill engineering, the 2010 Thomas A. Middlebrooks Award for his paper on Shear Strength of Municipal Solid Waste, and the 2011 Karl Terzaghi Award for his ASCE publications on the analysis, design and construction of waste containment systems.

He has delivered keynote addresses and state of the art papers on waste containment systems and landfill engineering at several international conferences and is co-author of the U.S. Environmental Protection Agency guidance document of RCRA Subtitle D (40CFR258) Seismic Design Guidance for Municipal Solid Waste Landfill Facilities. Prof. Kavazanjian is also recognized for his work on geotechnical seismic design of transportation systems. He is lead author of the FHWA guidance document of LRFD Seismic Analysis and Design of Transportation Geotechnical Features and Structural Foundations. He is a registered Professional Engineer in Arizona, California, and Washington and has served as Engineer of Record on numerous landfill and waste containment projects.

CONTENT:

A performance based approach has been developed for establishing the seismic coefficient, k_s , for use in pseudo-static analyses of slope stability and retaining walls. While the seismic coefficient is one of the most important parameters in these types of analyses, relatively little guidance is available on the appropriate value to use in design. Furthermore, most existing guidance is based upon work done over 30 years ago. However, work on a recent US National Cooperative Highway Research Program project has led to development of a new method in which the seismic coefficient depends upon the acceptable permanent seismic displacement as well as on factors representing the seismic environment and the spatial incoherence of the ground motions. Factors considered in this approach includes the seismic environment, amplification of ground motions by local site conditions, spatial and temporal attenuation of ground motions over the potential failure mass or retaining wall backfill, and acceptable permanent seismic displacement. Analyses using this new method demonstrate that in earthquakes of magnitude up to 8.0 a seismic coefficient equal to no more than 50% of the free-field PGA at the site, and in some cases less than 25% of the free-field PGA, is appropriate for retaining walls and slopes over 100 ft in height if 1-2 inches of permanent displacement can be accommodated in the design event. Even smaller values of the seismic coefficient are appropriate in small magnitude earthquakes or if greater seismic displacement can be accommodated.



DETAILS

Executive Inn, 4201 Lougheed Highway, Burnaby, BC V5C 3Y6 (Phone: 604-298-2010)
Social Hour: 5:30 to 6:30 pm (drinks available at the hotel bar)
Technical Presentation: 6:30 to 7:30 pm
Dinner: 7:45 pm (\$30 will be charged for dinner)
RSVP: Dinner reservation to ali.amini@shaw.ca or the door

The VGS would like to thank the following companies (in alphabetical order) for financially sponsoring this Cross Canada Lecture Tour:

- ***BGC Engineering Inc.***
- ***ConeTec Investigations Ltd.***
- ***EBA Engineering Consultants Ltd.***
- ***Golder Associates Ltd.***

The Cross Canada Lecture Tour is organized by the Canadian Geotechnical Society and its various local sections, and travel funds are provided by the Canadian Foundation for Geotechnique.