

Australian Geomechanics Society EVENT WESTERN AUSTRALIA CHAPTER



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AGS WA TECHNICAL PRESENTATION

Victor Milligan Award 2012 Estimation of Parameters for Seismic Design in Peru

Peru is situated along the western edge of the convergent plate boundary between the South America plate in the east and Nazca plate to the west where ongoing subduction is the major source of large damaging historical earthquakes. We present results of a detailed probabilistic seismic hazard analysis for Peru to provide site-specific 0.2-second and 1.0 second spectral accelerations (S_a), earthquake magnitude (M), source- to-site distance (D) and epsilon (ϵ) parameters suitable for seismic design.

The parameters are quantified for a return period of 475 years for Lima, Arequipa, Huancayo and Puno. We compare site-specific seismic design spectra based on our results with those specified in the Peruvian Seismic Code (PSC). We find the two approaches compare well at Lima, but at the other cities the PSC overestimates the spectral accelerations by factors of about 1.2 to 1.5. A major contributor to the observed differences is that the PSC has a three-fold macrozonation based on political boundaries rather than smoothly varying seismic parameters based on tectonic and seismic criteria.

THE PRESENTER

Manuel Monroy is a seismic specialist with experience in probabilistic and deterministic methods for determining levels of seismic hazard across the Americas. His particular strength is in geotechnical earthquake engineering—quantifying levels of ground shaking, earthquake acceleration records compatible with prescribed response spectra, liquefaction analyses and nonlinear seismic soil response analyses.

Manuel has been involved in the development of a wide variety of mining and natural gas projects where the earthquake assessment was a critical component in project development and design. He has participated in the design of large tailings dams, heap leaches and seismic assessments for natural gas pipelines. Manuel has completed more than 20 peer-reviewed deterministic and probabilistic seismic hazard assessments for major projects in Peru. He has also developed seismic hazard studies for projects in Chile, Argentina, Mexico, Colombia and Canada. Manuel has been actively contributing to the understanding of levels of seismic hazard for earthquake mitigation in Peru, for which he received the Golder Associates Victor Milligan Award for the best paper on Ground Engineering in 2012.

THE DETAILS

WHEN

Thursday 21st November 2013
5.30pm Light Refreshments
6.00pm Presentations

WHERE

Woolnough Lecture Theatre (Building 225; Room 107)
First Floor Room 107 (Geography and Geology Building)
University of Western Australia, Crawley WA (see map overpage)

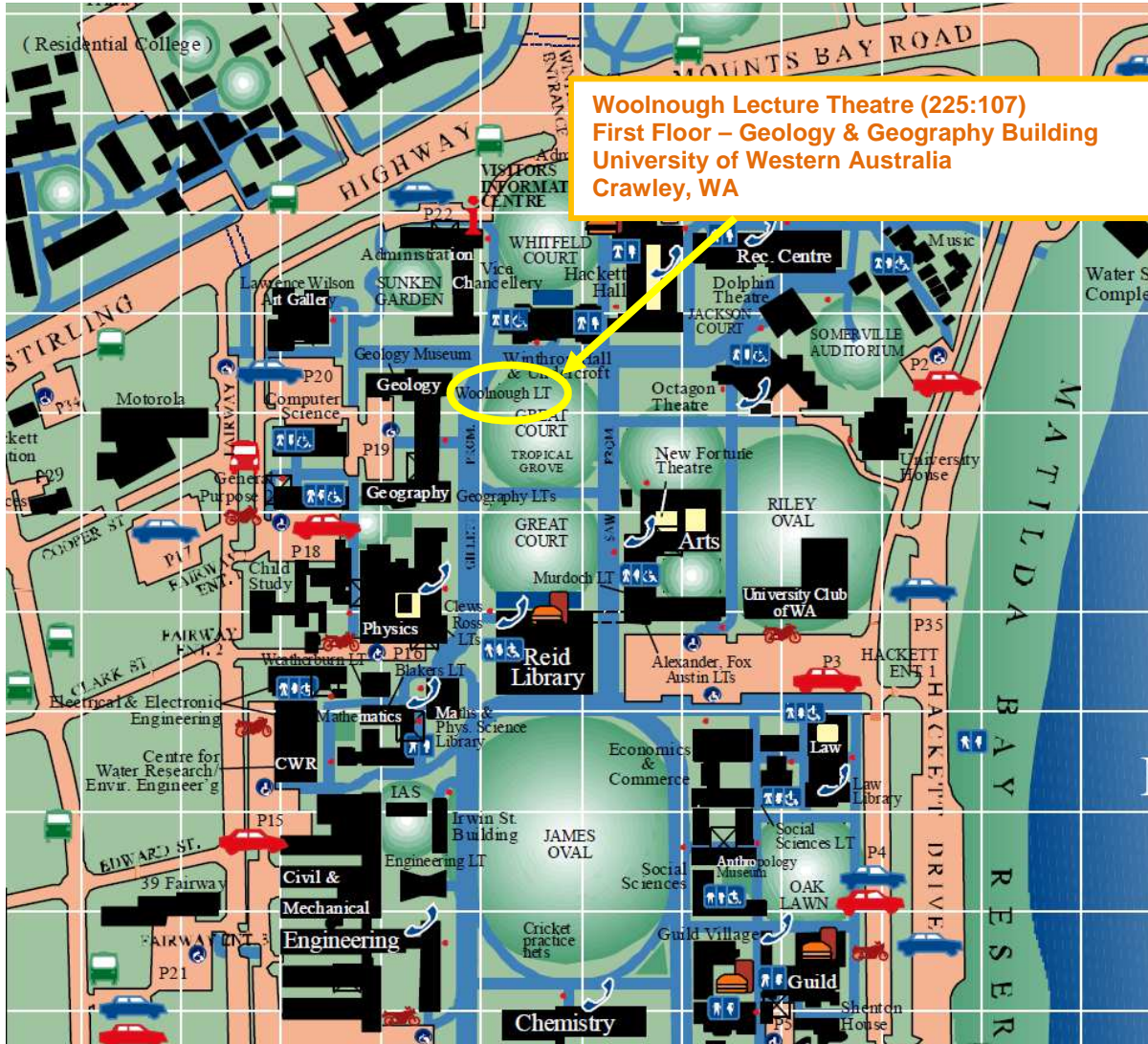
DINNER

You are invited to join the Speaker for dinner after the talk (pay your own way) at Ti Amo Café Restaurant, 57 Hampden Road, Nedlands

CPD

Engineers Australia members participating in AGS technical sessions can record attendance on their personal Continuing Professional Development (CPD) logs. Members should refer to Engineers Australia CPD policy for details on CPD types, requirements and auditing guidelines.

VENUE LOCATION



Link to location: <http://www.uwa.edu.au/contact/map?id=2026>