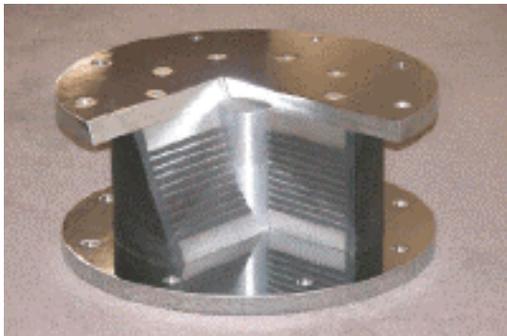
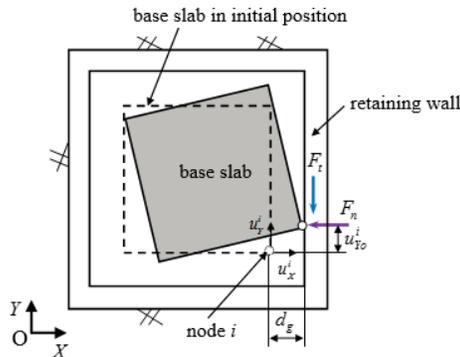


Performance of Base-Isolated Buildings Subject to Near-Fault Ground Motion

The seminar is presented by **Dr. Deepak Pant**, a Postdoctoral Researcher at the University of Toronto.



Base isolation is widely considered as an efficient technique to improve seismic performance of buildings. The most desirable performance of base-isolated buildings i.e., significant reduction in structural as well as nonstructural damage, is achieved when the superstructure remains essentially elastic and seismic pounding with adjacent structures does not occur. While field evidences and previous studies suggest that the desirable performance of base-isolated buildings can be assured under far-fault ground motions containing long-period pulses is of increasing concern. Current design codes do not explicitly take into account the effects of near-fault ground motions on buildings, and hence their applicability in the context of near-fault earthquakes is to be evaluated. Furthermore, extreme nonlinear response of the superstructure and seismic pounding with adjacent structures are two potential consequences of strong near-fault ground motions acting on base-isolated buildings, which need special considerations in numerical simulations.

In this presentation, the speaker will discuss issues ranging from selection and scaling of near-fault ground motions to the effects of seismic pounding on the performance of base-isolated reinforced concrete buildings. Emphasis will be placed on the evaluation of the accuracy of the simplified analysis methods contained in design codes, consequences of modeling inherent damping in nonlinear time-history analysis, and development of a new contact element for seismic pounding simulation including friction effects.

Time and Location

The seminar will be held on Monday, **September 29, 2014** between 12pm and 1pm at the University of Toronto, **Galbraith Building, Room 117**, located at 35 St. George Street, Toronto, Ontario, M5S 1A4.

Expert Speaker

Dr. Deepak Pant is a Postdoctoral Researcher at the University of Toronto working with Professor Christopoulos on the development of a next generation of modelling tools for high-rise and super high-rise buildings. He received his PhD in Structural Engineering from Tokyo Institute of Technology in 2013. He was also a visiting research scholar at the University at Buffalo in 2012. His awards include a Gold Medal for his academic performance in his Bachelors Degree and the prestigious Japanese government scholarship for graduate studies. His research interests are in the broad areas of earthquake engineering, structural dynamics, and computational mechanics. He has published his research in leading international journals and has received best paper awards at several international conferences. He was also invited by the Pacific Earthquake Engineering Research (PEER) Center, UC Berkeley in 2010 and 2011 to present his work at the PEER annual meetings in California.



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