



Engineering Seminar

Dimitrios G. Lignos, Ph.D.

Assistant Professor
McGill University, Montreal, Canada

“Collapse Assessment of Steel Structures Under Extreme Earthquake Loading Recent Advancements and Future Directions”

ABSTRACT

Adequate safety against collapse of structures is of fundamental concern in the design decision process. It is closely tied to life safety considerations and may be also an important factor in economic loss estimation. Over the past decade, significant effort has been devoted to understand the collapse behavior of steel structures under extreme earthquake loading and to minimize the collapse potential of these structures designed based on modern seismic provisions. The new generation of large-scale experimental facilities around the world offers the opportunity for realistic collapse simulations of steel structures that were not possible in the past. Landmark experimental data on components and structural systems have been become available and has been utilized for the improvement and validation of advanced simulation models and experimental techniques that are able to simulate collapse.

This presentation discusses recent advancements on the importance and simulation of cumulative damage effects of steel components for reliable collapse assessment of steel structures under severe earthquake shaking. Collapse mitigation strategies are investigated that affect key parameters in the design process of steel structures. This assessment is based on integrated experimental and analytical research. Future directions to improve the state of knowledge on how to reliably assess collapse are also discussed.

DATE: Wednesday, February 23, 2011

TIME: 3:00 P.M.

LOCATION: 140 KETTER HALL, NORTH CAMPUS, UNIVERSITY AT BUFFALO

ORGANIZED BY: CSEE-GSA, Student Chapter of EERI at UB, MCEER and Dept. of CSEE

Refreshments will be served !!!

Dimitrios G. Lignos, Ph.D.
Assistant Professor
McGill University, Montreal, Canada



Dimitrios Lignos is an Assistant Professor at McGill University in Montreal, Canada. He received his diploma in Civil Engineering with emphasis in Structural Engineering from National Technical University of Athens (2003). Dr. Lignos obtained his Masters (2004) and Ph.D. Degree (2008) from Stanford University in California. A significant part of his experimental studies towards his Ph.D. degree were conducted at the Structural Engineering and Earthquake Simulation Laboratory (SEESL) of the University at Buffalo. As part of his post-doctoral studies, Dr. Lignos conducted experimental research at the University of California, Berkeley (2009) and in Kyoto University in Japan (2010) with emphasis on collapse behavior and seismic retrofit of steel structures.

Dr. Lignos research involves integrated experimental and analytical methods for the development of performance-based assessment techniques for seismic design and evaluation of steel structures. His research focuses on collapse assessment of structural systems including cumulative damage effects and seismic rehabilitation of steel structures with innovative materials. Dr. Lignos is currently involved with various Applied Technology Council projects for seismic code development, implementation of research results in practice and the development of simplified assessment techniques.