

DEPARTMENT OF CIVIL, STRUCTURAL
AND ENVIRONMENTAL ENGINEERING



CSEE GRADUATE STUDENT ASSOCIATION



Student Chapter
University at Buffalo



Engineering Seminar

Wind Effects on Structures: The Next Frontiers

Ahsan Kareem

Robert M. Moran Professor of Engineering,
NatHaz Modeling Laboratory
University of Notre Dame

Quantification of aerodynamic loads on modern long span bridges, tall buildings and deep offshore platforms for oil production and supporting wind turbines is central to the assessment of their performance in extreme winds. This seminar will address fundamental issues related to the modeling of wind load effects on these structures. An overview of the extreme wind characteristics in hurricanes, tornadoes and downbursts and their impact on structures will be provided. Basic techniques for quantification of wind loads and their effects using analytical, CFD and model-based and data driven simulation schemes, codes and standards based procedures, and experimental and full-scale experiments will be presented. A synopsis of recent efforts in the development of cyber-based technologies with applications to analysis and design of structures will be outlined with examples from VORTEX-Winds and the Cyberinfrastructure Discovery and Innovation (CDI) project.

Dr. Ahsan Kareem, the Robert M. Moran Professor of Engineering at the University of Notre Dame, has research interests in structural engineering with applications to wind, waves and earthquake loadings, including use of cyber-based technologies for analysis and design. He is a former President of the American Association for Wind Engineering, a Distinguished Member of ASCE, and a member of National Academy of Engineering (NAE). He has received numerous honors for contributions to dynamic wind load effects on structures.

DATE: Friday, October 1, 2010
TIME: 2:00 pm
LOCATION: 140 Ketter Hall, University at Buffalo