Lichtenstein Distinguished Lecture

College of Engineering

Department of Civil & Environmental Engineering & Geodetic Science

Ahsan Kareem

Robert M. Moran Professor of Engineering
University of Notre Dame

Dr. Kareem received his B.S. in Civil Engineering from Pakistan University of Engineering and Technology in 1968, M.S. from University of Hawaii in 1975, and Ph.D. from Colorado State University in 1978. He currently directs NatHaz Modeling laboratory at Notre Dame. His work focuses on probabilistic structural dynamics with applications to wind, waves, and earthquake loadings. Before joining Notre Dame, he served as assistant, associate and full professor and the Director of Structural Aerodynamics and Ocean Systems Modeling Laboratory at the University of Houston. He has published 160 technical articles in refereed journals. Among his awards are ASCE J. E. Cermak Medal , ASCE Robert H. Scanlan Medal**,** and the Alan G. Davenport Medal from the International Association of Wind Engineering . He was elected to the National Academy of Engineering in 2009 for his contributions to *analyses and designs to account for wind effects on tall buildings, long span bridges, and other structures.*

Tailoring Contemporary Structures for Dynamic Wind Effects

The seminar will provide an interesting guided tour of the effects of wind on contemporary structures. The challenges in this field are enormous and a multidisciplinary approach is required to address them. An assessment of aerodynamic loads on modern long span bridges (e.g., crossings over straits like Messina), tall buildings (e.g., extending beyond atmospheric boundary layers like Burj Dubai) and deep offshore platforms (Compliant systems several thousand feet) is central to their performance analysis in extreme winds. This seminar will address fundamental issues related to the modeling of wind load effects on these structures. A brief overview of the extreme wind characteristics in hurricanes, tornadoes and downbursts and their impact on structures will be presented. Examples of glass damage experienced by many high-rise buildings during Hurricane Ike will be presented with a forensic analysis of damage. An overview of the basic techniques for quantification of wind loads and their effects using analytical, CFD and model based simulation schemes, code and standards-based procedures, and full-scale experiments will be presented.

THE OHIO STATE UNIVERSITY

Friday, November 20, 2009
3:30 P.M.
260 Dreese Hall, 2015 Neil Avenue
The Ohio State University
Columbus OH 43210

Host: Hojjat Adeli (phone: 614-292-7929)