



Northeastern

Department of Civil and Environmental Engineering

Wind Loads in Tornadoes

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Abstract

Tornadoes generate the strongest winds known to man and have wrought massive damage in the United States and elsewhere in recent years. However, the vast majority (~90%) of tornadoes produce winds that are no stronger, notionally, than winds used for designing for hurricanes in Florida. In an effort to address increasing public demand for better protection against tornadoes, the ASCE Wind Load Subcommittee is seeking to address tornado wind loads in a rational manner.

This seminar will review the engineering state of knowledge of tornados and present recent studies undertaken by the speaker and colleagues in VorTECH, the 10m diameter tornado simulator at Texas Tech University, that sought a better understanding of tornadic wind loading and in particular the role played by the atmospheric pressure deficit, building permeability and internal pressure.

Bio

Chris Letchford obtained a bachelor's degree in Civil Engineering from the University of Queensland and a doctorate in Wind Engineering from Oxford University. A Fellow of the Institution of Engineers Australia, the Structural Engineering Institute and ASCE, he has served on the Australian Wind Loading Code Committee and represented ASCE on the ISO Wind load Committee. He currently serves on the ASCE 7 Wind Load Subcommittee. He has served as Chair of the Australasian Wind Engineering Society and is currently Vice-President of the American Association for Wind Engineering. His passion is for fluid mechanics and he has taught on 3 continents, leaving a son behind on each!