東京工芸大学風工学共同研究拠点・TJU・TTU・共同研究集会

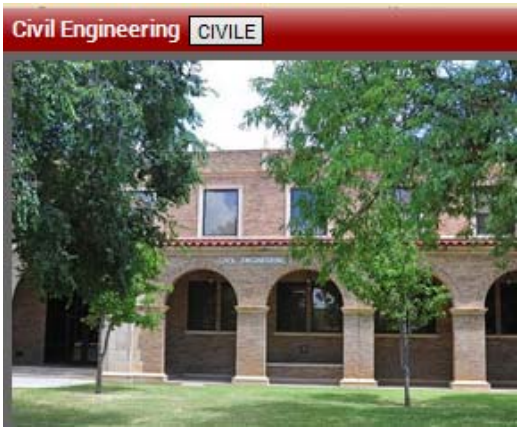
Wind-resistant Design for Membrane Structures

Membrane structures are widely used for long-span structures, and they are typical roof structures with strong flexibility. Being inherently light in self-weight and flexible in structural stiffness, these roofs tend to deform and oscillate with relatively large amplitude under strong wind loads. Consequently, wind pressure distribution on such flexible roofs may be changed due to the relatively strong vibration, and the effects of the mass and elastic support of air nearly around the roof may be necessary to be considered. Hence, investigations on such fluid-solid interactions of tensile membrane elements, including wind pressure distribution, air-supported stiffness, aeroelastic damping ratio and added mass, etc., are among the most important topics for wind-resistant design of flexible structures.

A seminar on “Wind-resistant Design for Membrane Structures” will be hold in Prof. Xinzhong, Chen and Prof. Delong Zuo’ groups in National Wind Institute, Department of Civil and Environmental Engineering, Texas Tech University, Texas, USA on Nov.29, 2013, including several presentation on the added mass of flat membrane vibrating in still air by Prof. Yuanqi Li from Tongji University, China, Uncertainty analysis in wind-resistant design of large-span spatial structures by Dr. Di Wu form Beijing Jiaotong University, China, and Assessing probabilistic load effects by simulation and statistical extrapolation by Mr. Jie Ding, Ph.D. candidate from Texas Tech University, Texas, USA.

Welcome all who are interested in the topic to join the seminar.

Date: Nov.29, 2013, 1:30pm～5:30pm
Venue: CEE building, Conference room 108
Connection: Dept. of Civil and Environmental Engineering, Texas Tech University, Texas, USA（Mr. Jie Ding, Phone: 001 (806) 787-4855, Email: jie.ding@ttu.edu）



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プログラム

Nov.29, 2013	Seminar	
13:30 - 13:45	Welcome Prof. Xinzhong Chen	Texas Tech University, USA
13:45 - 14:30	Prof. Yuanqi Li Investigation on the added mass of flat membrane vibrating in still air	Tongji University, China
14:30 - 15:15	Mr. Jie Ding, Prof. Xinzhong Chen Assessing probabilistic load effects by simulation and statistical extrapolation	Texas Tech University, USA
15 minutes	Tea break	
15:30 - 16:15	Dr. Di Wu Uncertainty analysis in wind-resistant design of large-span spatial structures	Beijing Jiaotong University, China Visiting Scholar of TTU
16:15 - 17:15	Discussion	
16:15 - 17:15	Final comments and acknowledgements Prof. Yuanqi Li Prof. Xinzhong, Chen Prof. Delong Zuo	 Tongji University, China Texas Tech University, USA Texas Tech University, USA

Nov.30, 2013	Facilities visiting	
09:30 - 10:30	Boundary Layer Wind Tunnel Debris Impact Facility Tornado Simulator	Venue: Reese Center
10:30 - 12: 00	200m Meteorological Tower TTU Field Building	Venue: West of Reese Center