

## ENGINEERING SEMINAR

# RECENT EARTHQUAKES AND NEW CONCEPTS FOR EARTHQUAKE- RESISTANT DESIGN

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### **Abstract**

Over the last 100 years or so, engineers have developed methodologies for design and technologies for earthquake-resistant structures. A prevailing design approach today is to allow for inelastic deformations of a structural system in a strong earthquake. While this approach likely ensures life safety, a large number of buildings are typically damaged to the extent that they require significant retrofit or need to be demolished. This leads to significant costs and extensive community disruption. In 2016 in Japan, one of the most technologically advanced countries in the world, the Tainan earthquake in February and the Kumamoto earthquake in April resulted in about 10,000 buildings being tagged as collapse risks and they had to be abandoned by their 100,000 occupants. Learning from this and prior earthquake experiences, we have changed our philosophy for earthquake-resistant design for the 21st century. The presentation will focus on these new trends in seismic design.

### **Biosketch**

Professor Akira Wada is considered to be Japan's leading expert in structural engineering with a specific focus on seismic structural design, base isolation and damping. He has contributed significantly to the understanding of behavior of tall building structures in seismically active regions and himself has been responsible for the design of a number of tall buildings in Japan. Dr. Wada's contributions to the field of science and technology and his connections in Japanese academic and government circles make him uniquely qualified to lead and consult on a wide variety of projects.

Since becoming Professor at the Tokyo Institute of Technology in 1989, Dr. Wada has held a number of important positions, including serving as President of ANCER and chairing the CTBUH Japan Chapter since its formation in 2010. He was elected President of the Japan Seismic Isolation Association in 2014. He also has served as President for the Architectural Institute of Japan (AIJ, 2011.6-2013.5). He is the recipient of the 2011 Fazlur R. Khan Lifetime Achievement Medal.

**Date:** Thursday, September 15, 2016

**Time:** 11:00am-12:30pm

**Location:** 140 Ketter Hall, North Campus, University at Buffalo

**Webcast:** <http://civil.eng.buffalo.edu/webcast>

*Refreshments will be served!*