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Sa zadovoljstvom Vas pozivamo na prvo SUZI predavanje u 2023. godini:

High-performance steel structures for seismic applications

Predavač:

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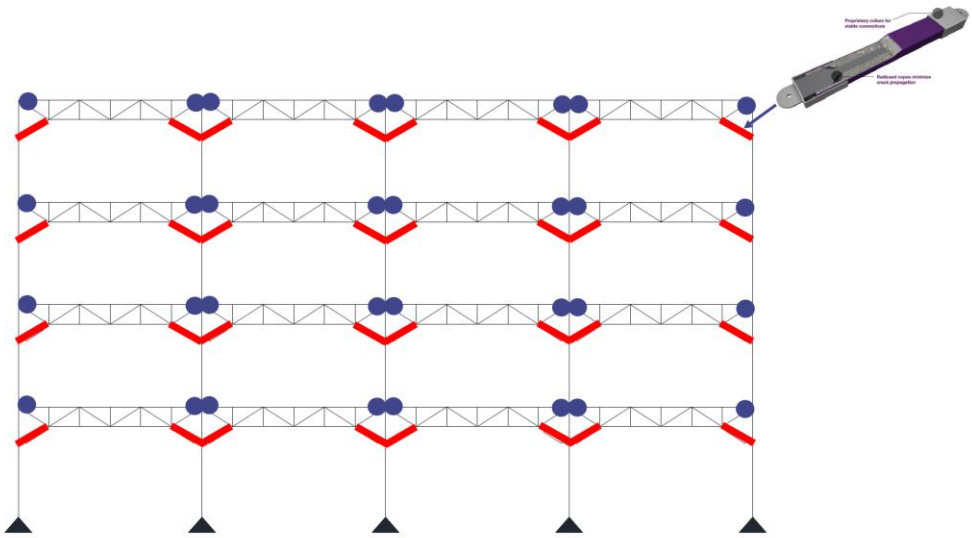
Sreda 22. februar 2023. od 18:00-19:00 časova

Predavanje će se održati na engleskom jeziku uz pomoć Zoom platforme

Zoom link će biti otvoren 15 minuta pre početka predavanja

https://us02web.zoom.us/j/83291774905?pwd=ZytTUE8zeWlPdVFvUjFDWHdXQ1RVdz09



Abstrakt

Recent earthquakes in Japan and New Zealand have shown that even the most developed countries with modern building codes are still vulnerable to strong earthquake shaking. The issue lies in the fundamental approach in the structural design, where the earthquake energy is absorbed through inelastic deformation of the structural components. This design approach leads to unrecoverable structural damages and hefty social and financial losses. Earthquake losses can be minimized using high-performance earthquake resilient structures, in which designated structural fuses (dampers) are used to dissipate the sudden surge of earthquake energy. This design philosophy will achieve higher performance and allow the structure to recover efficiently and economically after strong earthquake shaking. In this lecture the focus is on steel structures equipped with the dampers.

Implementation of innovative earthquake resilient technologies has been hindered by a lack of practical design procedure that can be used by design engineers. In this presentation, a novel design procedure, named equivalent energy-based design procedure (EEDP), will be presented and its application on seismic design of structures equipped with dampers will be illustrated. With the use of the EEDP methodology, engineers are able to select the required sizes of structural members which are suitable for achieving the desired vibration period, strength, and deformation characteristics through simple calculations. The lecture will also present two innovative earthquake resilient systems, Linked Column Frame (LCF) and fused truss moment frames (FTMF), which can be designed using EEDP, as illustrated in the presentation. The proposed approach can be applied to various types of energy dissipation devices, as documented by several published papers.

Predavač:

Dr Tony Yang is a professor in the Department of Civil Engineering at the University of British Columbia, Canada. He received B.Sc. (2001) and M.Sc. (2002) degrees in civil engineering from the University of Buffalo, USA, and Ph.D. degree from the University of California, Berkeley in 2006. His research focus is on improving the structural performance through advanced analytical simulation and experimental testing. He has developed the next-generation performance-based design guidelines which were adopted by the Applied Technology Council (ATC-58 research team) in the United States. He also specialized in the development and application of advanced experimental testing technologies, such as hybrid simulation and nonlinear control of shaking table, for evaluating structural response under extreme loading conditions. Prof. Yang also developed risk-based simulation models for countries in the North and South America and the Global Earthquake Model (GEM) for the counties in the South East Asia. Prof. Yang's research has been widely applied in national and international research and code committees. He has published over 100 peer reviewed journal papers and has given over 100 invited lectures in many leading research institutes worldwide. Prof. Yang is a voting member of the Standing Committee for Earthquake Design, which is responsible for developing seismic design provisions for the National Building Code of Canada. Prof. Yang is also a technical committee member of CSA S16, which is responsible for developing the seismic design provision of steel structures in the Canada. Prof. Yang is an active member of the Tall Buildings Initiative Project which has developed seismic design guidelines for tall buildings in the West Coast of United States. Prof. Yang's work has been well recognized by his colleagues, he is the recipient of the 2014 CISC H.A. Krentz award, 2019 Technology award from the New Zealand Concrete Society and 2020 Meritorious achievement award from Engineers & Geoscientists British Columbia Canada, the most prestigious award given to professional engineer (P.Eng.) in the province of British Columbia, Canada.

Prof. Yang's web page: https://civil.ubc.ca/tony-yang/