Session ID: IDD-3

Title
INNOVATIONS IN ENERGY DISSIPATION DEVICES FOR SEISMIC PROTECTION

Convenors
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Description
The design concept of structures equipped with seismic energy dissipation devices has been developed over the past decades, and its practical implementations have seen a rapid increase since the mid-1990s. At present, a variety of energy dissipation strategies are being popularly used for mitigating earthquake-induced damage in new and existing civil infrastructures. The capability of these devices has been proven successful in enhancing the seismic performance of structural and non-structural components during earthquake events. Although conventional energy dissipation technologies are relatively mature, there are still existing issues related to manufacturing or in-service use. Some of these issues compromise the ability of conventional energy dissipation devices to meet the demand for resilient and sustainable civil infrastructure. Therefore, there is a growing interest in Innovations in Energy Dissipation Devices for Seismic Protection with the goal of achieving the high seismic performance of structures.

This Technical Session aims to generate a forum for the current state of knowledge and future research directions in the overall area of advanced energy dissipation devices for seismic protection. This Technical Session will cover the latest research results on these issues, by welcoming contributions from researchers, manufacturers, and designers that include, but are not limited to, the following aspects:
(1) Innovative vibration damping and isolation devices, techniques, and strategies
(2) Self-centering or low-damage energy dissipation devices
(3) Novel energy dissipation devices with superior ultra-low-cycle fatigue fracture life
(4) Advanced material applications in energy dissipation devices
(5) Advanced energy dissipation devices in practical engineering applications
(6) Critical assessment of energy dissipation devices under service/extreme loading scenarios
(7) Multi-hazards mitigation of structures equipped with advanced energy dissipation devices

Invited Speakers
J. Wang [4], Y. Liu [5], K. Chen [6], P. Chen [1]

Affiliations
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