Session ID: IDD-5

Title
APPLICATION OF SEISMIC ISOLATION IN NEW AND EXISTING BRIDGES: THEORETICAL AND PRACTICAL ISSUES

Convenors
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Description
Seismic isolation has been used successfully in bridges since the 70s. Presently, the use of seismic devices instead of normal bearings seems very easy and also quite convenient from an economic point of view.

The application of seismic isolation in bridges presents features quite different from the application in buildings. First of all, while in buildings the isolation devices are usually located at the foundation level, in bridges they are usually placed at the top of the vertical elements, piers and abutments, which must be protected by the earthquake effects. Furthermore, the horizontal actions on bridges, not relate to earthquakes, such as wind and braking loads, could be very important. These loads could also cause significant horizontal displacements and, therefore, large relative displacements between the spans. Another issue is the length of the structure, which determine important differences between the accelerations at the base of the piers. These features must be analyzed in detail when designing seismic isolation systems for bridges. Additional problems can arise in the retrofit of existing bridges.

The objective of this technical session is to have a suitable exchange among scientists from all over the world, with a state-of-the-art review on the application of seismic isolation in new and existing bridges and the most recent research developments and technical applications.

The technical session is organized under the auspices of FABRE Consortium (www.consorziofabre.it), the Italian scientific alliance on risk assessment and monitoring of civil infrastructural systems, and ASSISi, the Anti-Seismic Systems International Society.

Invited Speakers
G. Castellano [4], B. Briseghella [5], E. Tubaldi [6], A. Uzdin [7], S. Mitouli [8], A. Pavese [9], G. Lomiento [10]

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