

Session ID: IDD-9

Title

ADVANCES IN LOW-COST SEISMIC ISOLATION FOR NORMAL-IMPORTANCE BUILDINGS

Convenors

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Description

The 2023 Turkey-Syria Earthquake sequence has resulted in over 55,000 casualties, while the 1994 Northridge Earthquake in 57. This and many other examples highlight that even though earthquakes are a global phenomenon, their impact in terms of fatalities is tremendously disproportionate, with most deaths being concentrated in less privileged regions of the world. The main reason is that earthquake-resistant solutions developed in high-income countries are cost-prohibitive in low- and middle-income regions.

Base isolation is a proven earthquake-resistant solution, but the high cost of conventional isolation hardware has limited its application to developed countries and generally only to high-importance buildings. However, there have been recent research efforts to drastically reduce the cost of isolation and make it affordable and widely applicable to normal-importance construction in both developing and developed parts of the world.

Significant advances in cost-effective seismic isolation technology include elastomeric isolators with adaptive and sustainable compounds, alternative reinforcement materials, rolling isolation systems, multi-surface sliding systems, geotechnical seismic isolation, and others. This technical session will focus on illuminating recent developments in this area.

Invited Speakers

M. Tait ⁴, N. Van Engelen ⁵, H. Toopchi-Nezhad ⁶, S. Pinarbasi ⁷, M. Erdik ⁸, A. Strauss ⁹, N. Vaiana ³, E. Tubaldi ¹⁰, D. Forcellini ¹¹

Affiliations

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