

**Special Session Title:** Performance-based seismic design of buildings and bridges using seismic protection devices: Seismic isolation, tuned mass dampers and energy dissipation systems

**Conveners:**

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This Special Session aims to collect the latest research results on open issues in the performance-based design, assessment and retrofitting of buildings and bridges using seismic protection devices, such as seismic isolation bearings, energy dissipation systems and tuned mass dampers, by welcoming contributions from researchers, manufacturers and practitioners that include, but are not limited to, the following aspects:

- 1) Design, manufacturing and testing of innovative seismic isolation devices, tuned mass dampers or energy dissipation systems;
- 2) Experimental or numerical investigation on the seismic performance of structures/infrastructure equipped with traditional and/or innovative seismic protection devices, including low-cost seismic isolation methods;
- 3) Performance-based design and optimization of structures/infrastructure equipped with seismic protection devices;
- 4) Reliability-based design and optimization of structures/infrastructure equipped with seismic protection devices;
- 5) Advanced numerical modelling of the constitutive behavior of seismic isolation devices and energy dissipation systems;
- 6) Experimental observations or numerical investigations on the seismic performance of seismic protection systems under service or extreme loading scenarios;
- 7) Case studies or examples of implemented seismic isolation/energy dissipation technologies;
- 8) Life-cycle and resilience analysis of structures and infrastructure equipped with seismic protection devices.

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