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Progress and application on seismic isolation, energy dissipation and active vibration control in China

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China is a seismic country which 100% of territory is located in seismic zone. Most of strong earthquakes are over prediction. Earthquakes cause not only severe damages of structures and non-structural elements, but cause also severe damages of facilities and the city's performance life, like hospital, transportations, power plant etc., which induces people death or injury, induce people lose house, and induce severe disasters of modern society. The low damage and resilient structures has become the seeking goal, and the seismic isolation, energy dissipation and structural control become one of the best options at present in China!

The isolation, energy dissipation and Control are more and more widely used in recent years in China. There are over 6000 structures with isolation and about 5500 structures with passive energy dissipation or hybrid control in China now. The fields of application includes house, school and hospital buildings, airport and large or complex structures, bridges, immersed tunnel under sea or river, historical or cultural relic protection, industries facilities and retrofit for existed structures. Some projects have successfully experienced the strong earthquakes.

China has established the large scale and advance testing systems, compiled the national design codes and standards, and developed some new innovating systems and devices of isolation, energy dissipation and hybrid control. Paper also makes discussions for the future developing tendency on seismic resistance, seismic isolation, passive and active control in China and in the world.