Advanced seismic response analysis and design

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Recently, there is an increasing demand for high-fidelity analysis of structures in architectural and civil engineering. Using high-fidelity FE-models and large-scale parallel computing, we can evaluate local and global responses of structures simultaneously without resort to macro models of members and joints. Targets of high-fidelity analysis are not only main structures such as building frames but also devices such as braces and steel dampers for passive control as well as rubber bearings for base isolation. We are also interested in seismic behaviors of non-structural components such as furniture, doors, ceilings, walls, and equipment placed in buildings. Large-scale parallel computing also plays an important role in directly considering soil-structure interaction.

In this mini-symposium, we share recent developments of high-fidelity seismic response analysis and its application to seismic design. We also discuss issues on modeling and mesh generation, visualization, V&V, machine learning, optimization, data-driven approach, and advanced numerical algorithms.

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