

HIGH-PERFORMANCE COMPUTING FOR STRUCTURAL MECHANICS AND EARTHQUAKE / TSUNAMI ENGINEERING

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ABSTRACT

Damages of structures due to earthquake and tsunami show a wide variety of characteristics, depending on the combinations of structures and natures of earthquake and tsunami. Structural materials include woods, concretes, reinforced concretes, steels and so on. There are another classification in structures such as civil constructions, buildings and architectures, chemical, petrochemical and power plants, in which multi-physics phenomena such as fluid-structure interaction may occur. There are possibilities such that those structures may be attacked by a variety of earthquakes and tsunami in magnitudes and frequency spectra. In order to quantitatively predict such complex damage phenomena and to prevent them, high-performance computing technologies with sophisticated material modeling and analysis algorithms play key roles. In this mini-symposium, focusing on high-performance computing issues in structural mechanics and earthquake / tsunami engineering, we exchange ideas and information to advance computational mechanics for earthquake / tsunami engineering. .