

SIMULATION ANALYSIS OF SHAKING TABLE TESTS FOR FULL-SCALE SIX-STORY RC BUILDING USING THE EARTH SIMULATOR

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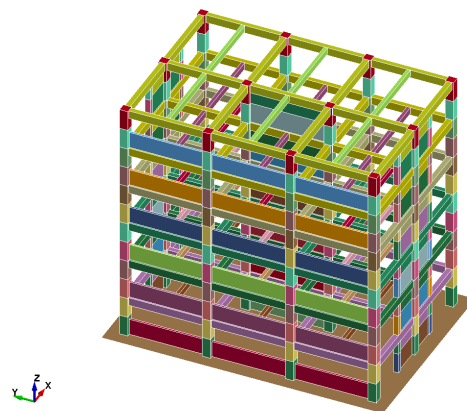
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SUMMARY

This study was performed with the purpose of developing a simulation analysis system for computing the collapse phenomenon of RC structure subjected to earthquakes. The Earth Simulator belonging to JAMSTEC (Japan Agency for Marine-Earth Science and Technology) is a highly parallel vector supercomputer and could be utilized by Maebashi Institute of Technology in fiscal year of 2010. A vast quantity of analytical data could be processed for modeling a RC structure in detail by finite elements. Earthquake response analysis for the shaking table tests of the full scale six-story RC building (Total mass of 1,000t) performed at the E-defense were executed using impact analysis code based on the explicit time integration. As a result, good simulation for the shaking table tests of the RC building was successfully realized. In addition, dynamic response characteristics of the RC building over the design input levels were evaluated through parametric studies increasing input levels of the earthquake motions.



Shaking Table Test for full scale six-story RC building
(TV Asahi)



Analytical Model by FEM
(about 2.08 million elements)