ISEE: Internet-based Simulation for Earthquake Engineering—Part I: Database approach

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SUMMARY

An Internet-based framework, named Internet-based Simulation for Earthquake Engineering (ISEE) was developed to facilitate collaborative earthquake engineering experiments performed by multiple laboratories in a network environment. One of the approaches in the ISEE framework, named Database Approach, offers an easy way to perform multi-site networked collaborative pseudo-dynamic experiments. The Database Approach uses the Structured Query Language (SQL), a common and standardized computer language used in database management systems, for inter-laboratory communications. Using the SQL protocol, it is easy to monitor the experiments’ progress, access the data, as well as develop additional programs to expand the functions for a networked experiment. This approach offers consistency and durability of selected experimental data both during and after experiments. Two networked pseudo-dynamic experiments were conducted to demonstrate the feasibility and expansibility of the Database Approach in ISEE. Copyright © 2007 John Wiley & Sons, Ltd.

INTRODUCTION

Structurals experiments play an important role in earthquake engineering research. The increasing complexity and scale of structural experiments are reflected in rising costs. As a result, existing...