

Engineering Seminar:

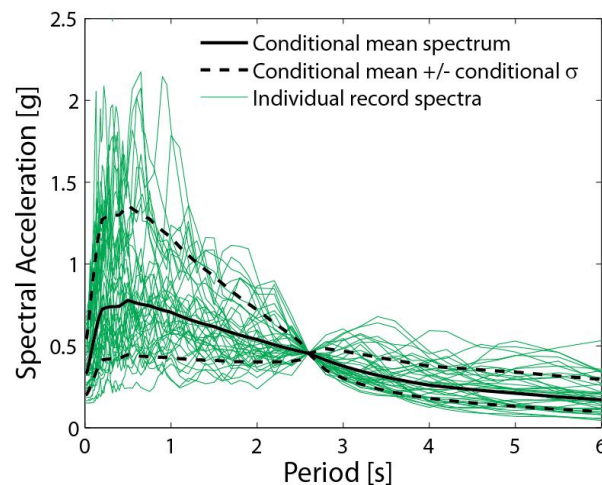
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“Current Practice and Future Directions in Ground Motion Selection for Structural Analysis”

Abstract

Use of recorded ground motions for structural analysis is a subject receiving much attention by both practitioners and researchers in the civil engineering community. The results from dynamic structural analysis are known to be sensitive to the choice of ground motion input, so this topic is not trivial and care must be taken to ensure that the input is as representative as possible of future ground motions that a structure might experience. To illustrate challenges and opportunities for engineering use of ground motions, typical selection procedures and uses of ground motions for analysis will be described. These uses include prescriptive checks to satisfy building code requirements, as well as newer procedures to more accurately quantify the probability building failures (often termed “performance-based engineering”). Two tools used in these analysis—the Uniform Hazard Spectrum and the newer Conditional Mean Spectrum—will be described and differences between the two will be highlighted. An improved understanding of these engineering analysis approaches and limitations may benefit all parties involved in the selection, simulation, or use of ground motions.



DATE: Thursday, December 1st, 2011

TIME: 2:00 P.M.

LOCATION: 140 KETTER HALL, NORTH CAMPUS, UNIVERSITY AT BUFFALO

ORGANIZED AND SPONSORED BY: EERI-SC at UB, CSEE-GSA, MCEER and Dept. of CSEE

WEBCAST URL: <http://civil.eng.buffalo.edu/webcast>

Snacks and Refreshments will be served!!!



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Jack Baker is an Assistant Professor of Civil & Environmental Engineering at Stanford University, where his research focuses on the use of probabilistic and statistical tools for modeling of extreme loads on structures. Prior to joining Stanford, he was a visiting researcher at the Swiss Federal Institute of Technology (ETH Zurich). He received his Ph.D. in Structural Engineering from Stanford University in 2005, where he also earned M.S. degrees in Statistics and Structural Engineering. He earned his Bachelor of Arts degree in mathematics/physics from Whitman College. His awards include the Shah Family Innovation Prize from the Earthquake Engineering Research Institute and the CAREER Award from the National Science Foundation.