



PROBABILISTIC SEISMIC HAZARDS ANALYSIS (PSHA) 2023

WEDNESDAYS, FRIDAYS, JAN 18 - MAY 12, 2023* | 11:00 AM - 12:30 PM PACIFIC | VIRTUAL

REGISTER

MEMBERS \$2500
NONMEMBERS \$3000

PART 1 - INTRODUCTION

Week 1

Class Overview

Intro to PSHA

Week 2

Probability Review

Aleatory Variability, Epistemic Uncertainty

PART 2 - STANDARD PSHA

Week 2

PSHA Mathematical Framework

Week 3

Seismic Source Characterization: Faults, Areal Zones

Week 4

Intro to Ground-Motion (GM) Models

Hazard Results, Uniform Hazard Spectra, CMS

Week 5

Probabilistic Risk Analysis and Risk-Targeted Spectra

Intro to Design-Time Histories

PART 3 - GROUND-MOTION MODELS

Week 6

Median GM Models: Empirical Models, HW Effects

Median GM Models: Model Complexities (NL Site Effects)

Week 7

Median GM Models: Finite-Fault Simulations
Components of Aleatory Variability of GM

Week 8

Modeling Directivity Effects

Conditional GM Models for Secondary Design Parameters

Week 9

Selection and Modification of Design-Time Histories

PART 4 - ADVANCED PSHA TOPICS

Week 10

Conditional Mean Spectra

Week 11

Vector Hazard

Simplified Methods for Checking Hazard Results

Week 12

Partially Non-Ergodic PSHA

Fully Non-Ergodic PSHA

Week 13

Site Response: VS Profile Correction Approach

Hazard-Consistent Conditional Scenario Spectra (CSS)

Week 14

Use of Epistemic Uncertainty from PSHA in Engineering Practice

Removing the Poisson Assumption from PSHA

Week 15

Review

Causes and Solutions of Convergence Errors



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University of California Berkeley

*CLASS MEETS EVERY WEDNESDAY AND FRIDAY EXCEPT FOR THE WEEKS OF MARCH 27 (SPRING BREAK) AND APRIL 10 (CALGEO CONFERENCE WEEK).