

DESIGN TIME HISTORIES 2025

MONDAYS, FEBRUARY 10 - MARCH 17 | 11:00 AM - 12:30 PM PACIFIC | VIRTUAL

REGISTER

MEMBERS \$450
NONMEMBERS \$750

This six-week class will cover development of time histories for use in dynamic analyses of structures including the following topics:

WEEK 1

- Selection of candidate seed time histories: What ranges of seismological parameters should be used?
- Use of simulated ground motions as seed time histories
- Description: Problem Set 1

WEEK 2

- Setting target ranges for secondary parameters, including period-dependent duration, Arias intensity, CAV, PGV, and near-fault parameters including velocity pulses and filtered incremental velocity metrics
- Conditional ground-motion models versus correlation of epsilons
- Review: Problem Set 1; Description: Problem Set 2

WEEK 3

- Setting target ranges for the variability of the response spectral value
- Alternative approaches: scaling versus spectral matching

WEEK 3 (CONT'D)

- Review: Problem Set 2; Description: Problem Set 3

WEEK 4

- Methods for evaluating if the scaled or matched time histories are realistic (median and variability)
- Plots and tables for documenting the design time histories
- Review: Problem Set 3; Description: Problem Set 4

WEEK 5

- Including static fault displacement (fling) in the time histories
- Review: Problem Set 4

WEEK 6

- Discussion of issues in implementation of recommended approaches



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