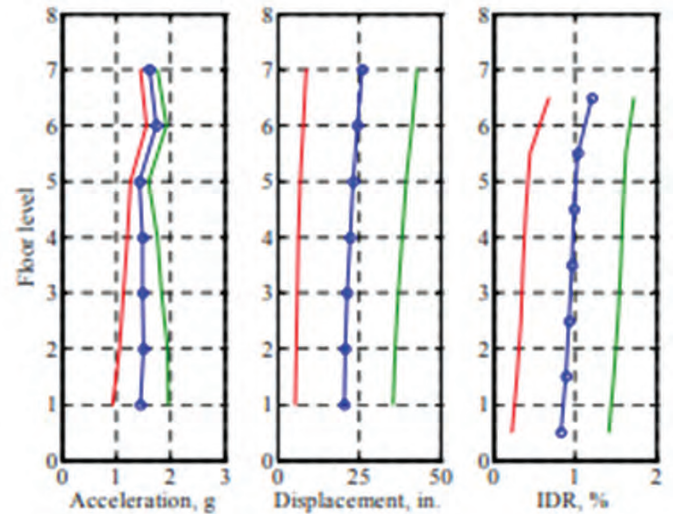


PEAK ABSOLUTE FLOOR RESPONSE AND IDR



MEAN  $\pm$  STD BOUND

# METHODS FOR DEVELOPING FRAGILITY FUNCTION IN PERFORMANCE-BASED EARTHQUAKE ENGINEERING

WooJong Kim  
CE'18

Professor  
Neil Simon Kwong  
FACULTY ADVISOR

The design objectives in current prescriptive seismic building codes address life safety and prevent collapse in a major earthquake. However, the actual performance of the design in achieving these objectives is unknown, which led to the development of Performance-Based Earthquake Engineering (PBEE). PBEE includes four key stages: Intensity Measure (IM), Engineering Demand Parameter (EDP), Damage Measure (DM), and Decision Variable (DV). The methodology starts from IM and ends with DV, which estimates downtime and fatalities.

This research introduces different methods for Fragility Analysis, which relates Engineering Demand Parameters to Damage Measures, and concludes with flow chart that guide user to achieve fragility function with the highest quality.

