DETECTING AND QUANTIFYING DAMAGE IN BUILDINGS USING EARTHQUAKE RESPONSE DATA

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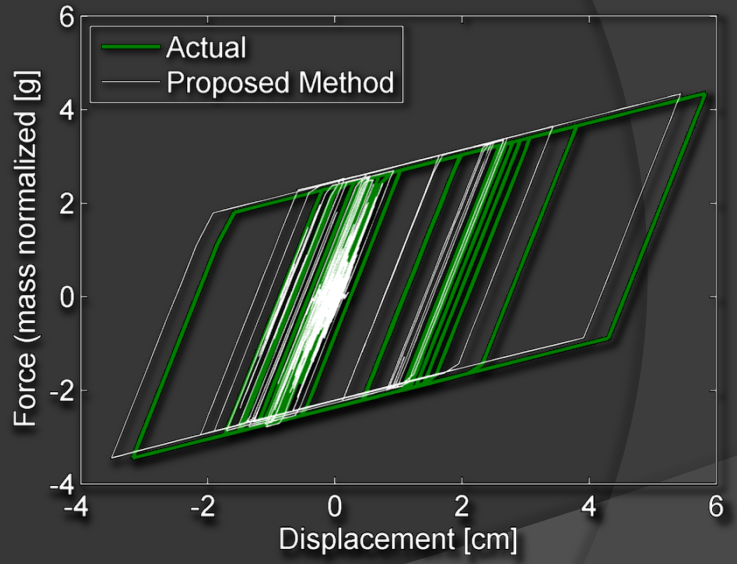
Research Objectives

- Focus: detect and quantify damage in instrumented buildings following earthquakes
- Hypothesis: accelerograms contain information to develop actual building lateral-load resistance curves from which extent and locations of nonlinear behavior could be estimated



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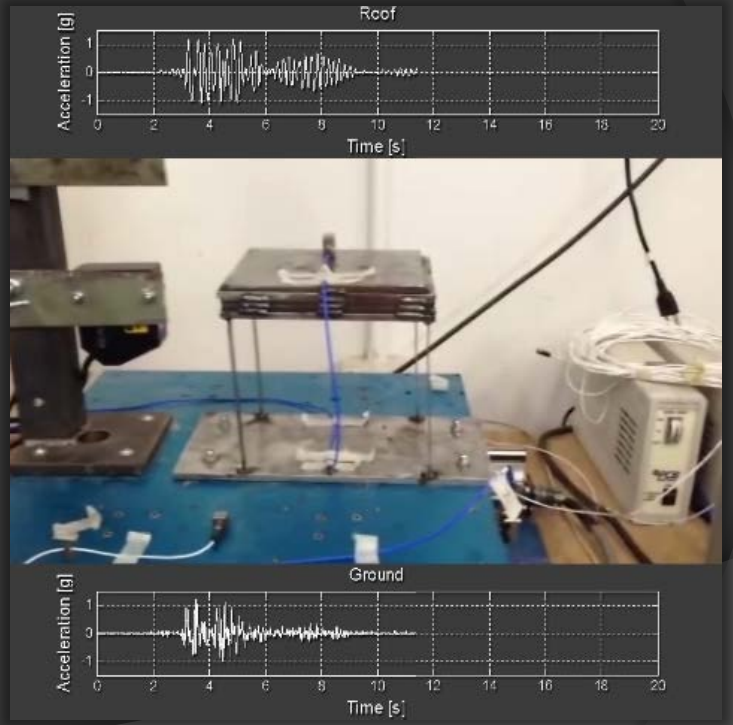
Research Tasks

- Numerical simulations for concept testing
  - Bilinear hysteretic
  - Bouc-Wen hysteresis
  - Takeda hysteresis
- Actual experiments
  - 1-story MRF structure
  - 2-story MRF structure
  - 3-story MRF structure



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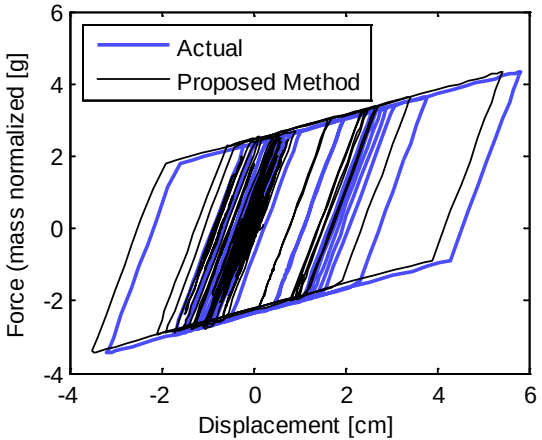
Detecting and Quantifying Damage in Buildings using Earthquake Response Data

The focus of this research is to develop the means to detect and quantify damage in buildings following earthquakes. The hypothesis is that building acceleration records contain sufficient characteristic information to develop the lateral-load resistance curve, also known as the capacity curve, from which the extent and locations of nonlinear behavior could be estimated.



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