



Becker Group Research

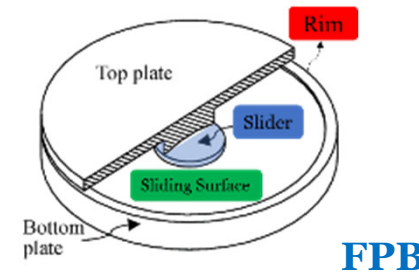
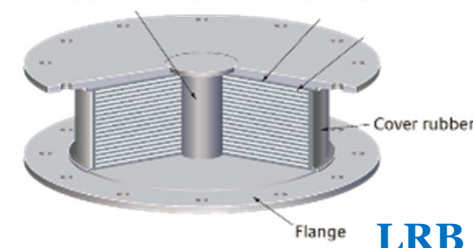
SEMM Lightening Talk Collapse Evaluation of Seismic Isolated Structures

Ya-Heng Yang 楊亞衡

Advisor: Professor Tracy Becker

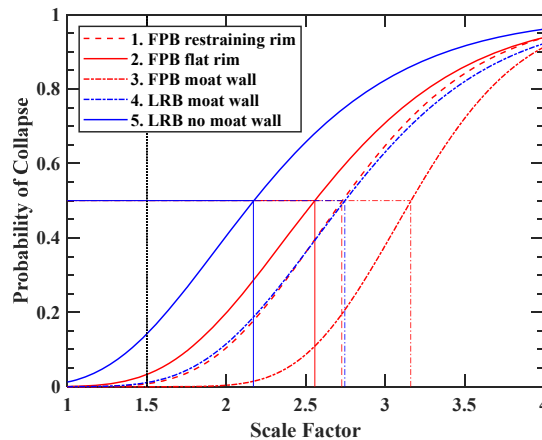
Structural Engineering, Mechanics and Materials
Department of Civil and Environmental Engineering
University of California, Berkeley

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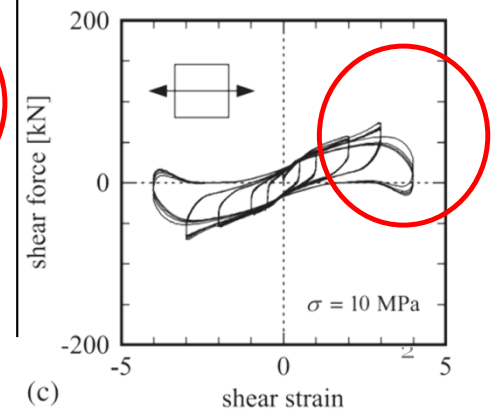
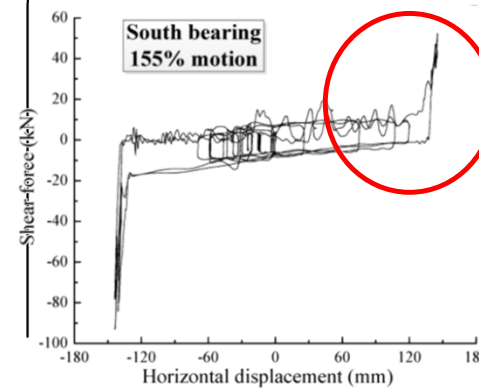
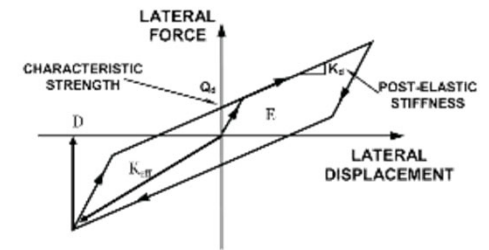
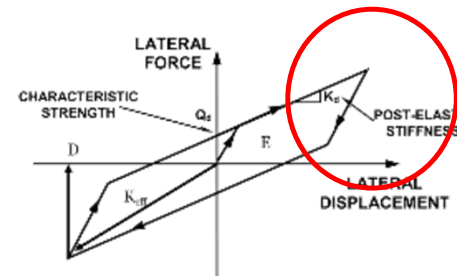
Research Question 1

If we use the same design guidelines for different types of isolation bearings, we will achieve the same collapse probabilities?



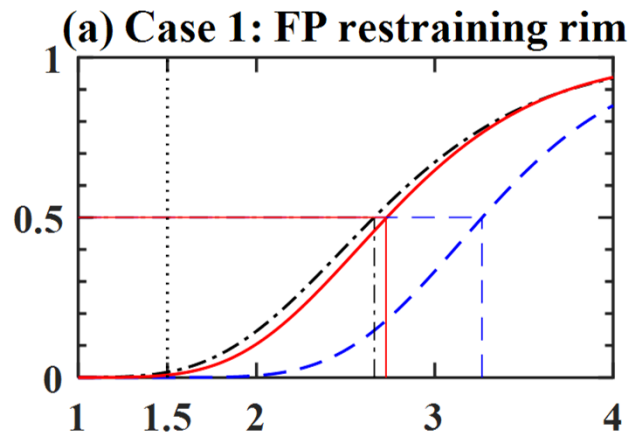
Design Level
(Moderate
Deformation)

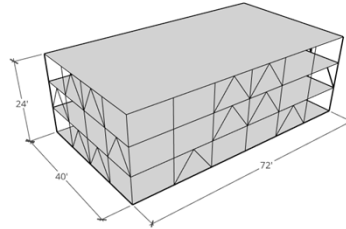
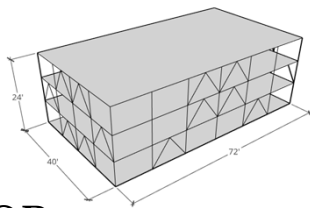
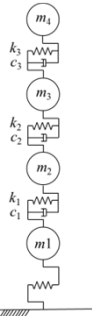
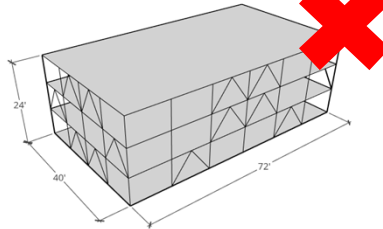
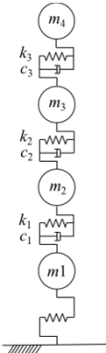
Ultimate State
(Large
Deformation)



Research Question 2

Simplified model is well-established in Japan for design level, can we extend it to the use of collapse evaluation?



| | United States | Japanese |
|--|---|--|
| Design Level (Moderate Deformation) |  <p>Full Model Computational expensive</p> |  <p>OR Lumped Mass Model With moderate compromise in accuracy</p>  |
| Ultimate State (Large Deformation) |  |  |

Research Question 3

Quantification of model uncertainty via Bayesian framework

