

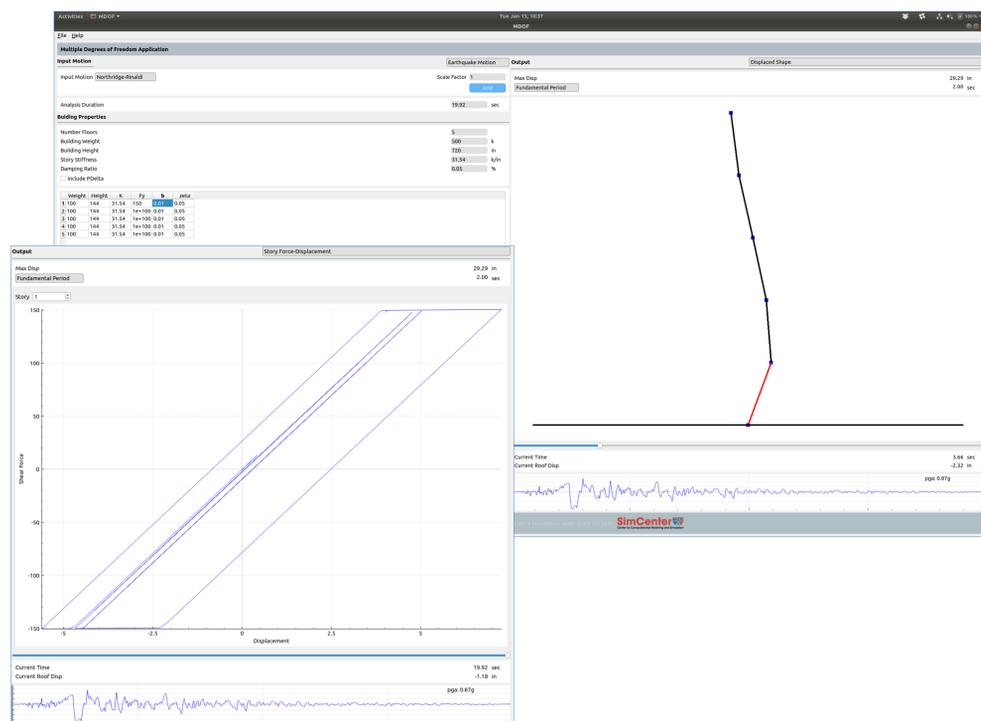
NHERI SimCenter EDUCATIONAL TOOLS

Overview

Learning tools developed by the SimCenter present educational resources across an array of Natural Hazards engineering principles. These software applications demonstrate basic and advanced modeling and simulation concepts. Software is free and open-source.

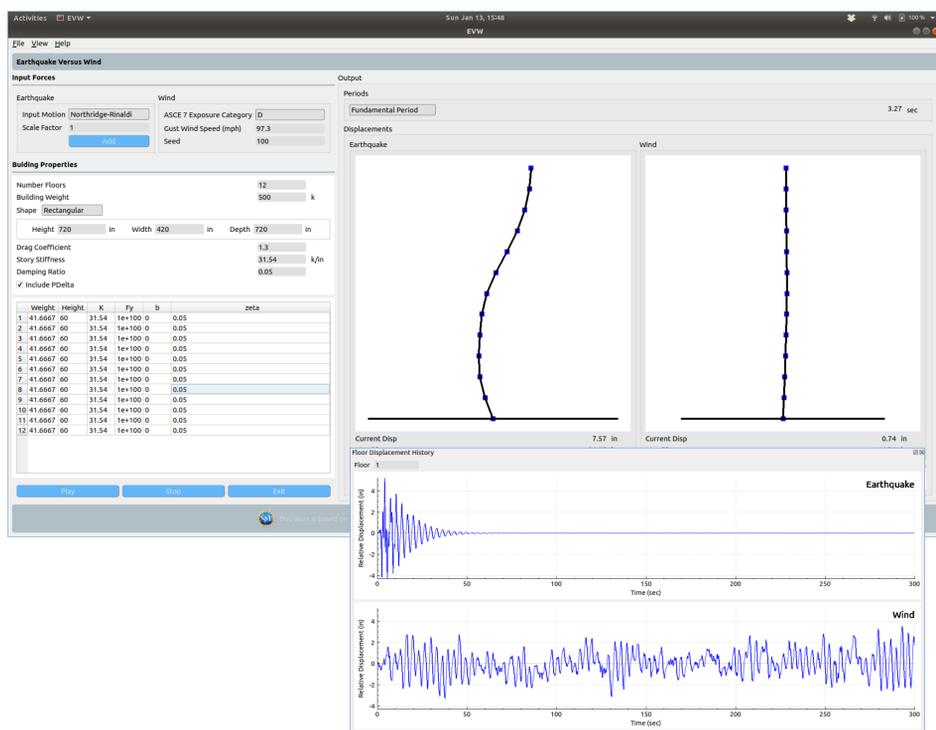
Multiple-Degrees-Of-Freedom Tool

This educational tool allows the user to explore the effects of different building parameters on the time-varying response of a building under earthquake or other transient loads.



Earthquake Versus Wind Tool

This software allows the user to compare the response of a building subjected to earthquake and wind loading. Apart from the effect of weight, height, and stiffness on the response, nonlinear effects due to P-Delta and soft story mechanisms can also be studied.



Software can be downloaded at:

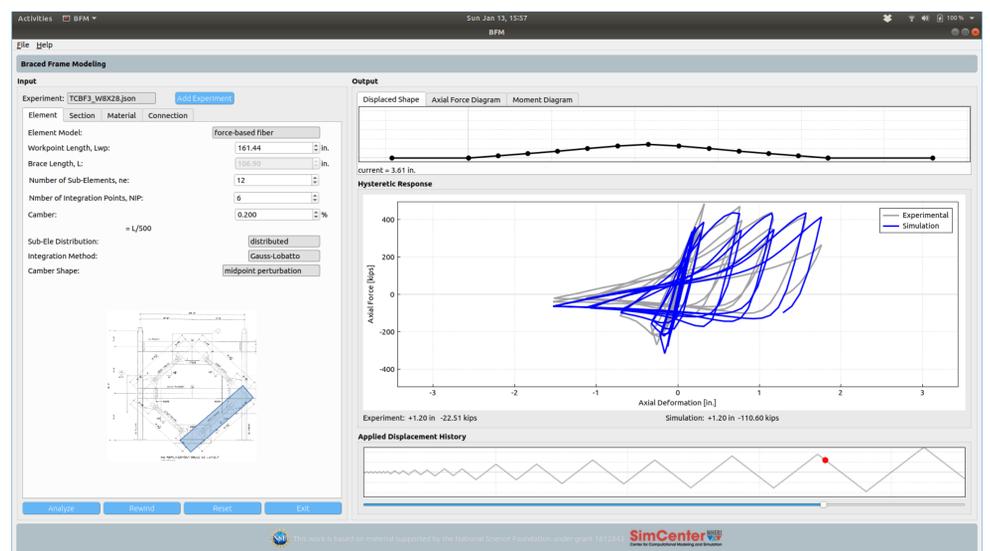
<https://simcenter.designsafe-ci.org/learning-tools/>

Source code available at:

<https://github.com/NHERI-SimCenter>

Braced Frame Modeling Tool

Braces are commonly used lateral resisting systems in buildings. This educational tool informs users on how braced frames can be modeled, such that they can be incorporated into structural models considering an entire building. Users are encouraged to explore how different modeling assumptions affect the response of a braced frame element and how the simulated response compares with actual experimental data.



Pile Group Tool

Through the Pile Group Tool's dynamic interface, users can study the behavior of a single pile or group of piles in layered soils. It allows users to observe the system's response to changes in site conditions, pile properties and applied loads.

