Seismic Response Analysis of Wooden Structure with Passive Control System Using Frame Model

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This paper proposes an accurate, member-by-member analytical model for timber structures having energy dissipation walls and/or plywood shear walls. Various member joints are modeled by using nonlinear spring elements whose properties derived from numerous test results, and model's schemes are described in detail. The analyses were found to reproduce both local and global responses obtained from cyclic loading tests and shaking table tests of a variety of one-story mult-span timber frames. Moreover, difference between single wall and linked walls, difference of seismic response by variation of damper and nail volume are discussed.