

## Estimation of Seismic Drift Demands for Inelastic Shear Frame Structures

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**Abstract :** The drift spectrum derived through the continuous shear-beam and wave propagation theory is known to be useful appliance to measure of the demand of pulse like near field ground motions on building structures. As regards, many of old frame buildings with poor or non-ductile column elements, pass the elastic limits and blurt the post yielding hysteresis degradation responses when subjected to such impulsive ground motions. The drift spectrum which, is based on a linear system cannot be predicted the overestimate drift demands arising from inelasticity in an elastic plastic systems. A simple procedure to estimate the drift demands in shear-type frames which, respond over the elastic limits is described and effect of hysteresis degradation behavior on seismic demands is clarified. Whereupon the modification factors are proposed to incorporate the hysteresis degradation effects parametrically. These factors are defined with respected to the linear systems. The method can be applicable for rapid assessment of existing poor detailed, non-ductile buildings.

**Keywords :** drift spectrum, shear-type frame, stiffness and strength degradation, pinching, smooth hysteretic model, quasi static analysis

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