**SEISMIC RESPONSE PREDICTION AND GROUND MOTION SELECTION BY USING INTENSITY MEASURES FOR BASE ISOLATED BUILDINGS**

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**ABSTRACT**

Base isolation has become a widely applied technique for protecting buildings located in highly seismic risk areas. The seismic response of base-isolated buildings is usually evaluated through non-linear dynamic analysis. A suitable set of ground motions is needed for representing the earthquake loads and for exciting the structural model for nonlinear time history analysis. The earthquake record selection method may lead to distinct results from each other based on the intensity measures used for scaling the records to the defined earthquake intensity level. Evaluation of the most commonly used intensity measures with respect to their capability to predict the seismic response of base-isolated buildings is presented in this paper. Two residential building with different height is selected for the investigation of intensity measure efficiencies. Structures are five and eight story r/c frame. Two sets of accelerograms, consisting of ordinary and near-fault records, are used in the analyses and in the evaluation of the intensity measures.

Keywords: Intensity measures, seismic response prediction, base-isolated buildings, near-fault, ground motion selection

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