

Correlation between Seismic Risk Insurance Indexes and Uninhabitability Indexes of Buildings in Morocco

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Abstract : The reliability of several insurance indexes of the seismic risk is evaluated and compared for an efficient seismic risk coverage of buildings in Morocco, thus, reducing the basic risk. A large database of earthquake ground motions is established from recent seismic events in Morocco and synthetic ground motions compatible with the design spectrum in order to conduct nonlinear time history analyses on three building models representative of the building stock in Morocco. The uninhabitability index is evaluated based on the simulated damage index, then correlated with preselected insurance indexes. Interestingly, the commonly used peak ground acceleration index showed poor correlation when compared with other indexes, such as spectral accelerations at low periods. Recommendations on the choice of suitable insurance indexes are formulated for efficient seismic risk coverage in Morocco.

Keywords : catastrophe modeling, damage, earthquake, reinsurance, seismic hazard, trigger index, vulnerability

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