



## **PRELIMINARY EVALUATION OF ATTENUATION CHARACTERISTICS OF COASTAL BELT OF SINDH WITH THE AID OF UPDATED GROUND MOTION PREDICTION EQUATION FOR EASTERN NORTHERN AMERICA**

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### **Abstract:**

Reasonably accurate prediction of intensity measures and frequency content at a given site, due to a seismic event, is imperative for performance based seismic design or assessment of structures. This paper aims to investigate the attenuation characteristics of Coastal Belt of Sindh (CBS) that starts from Karachi on the east and unites with Indian border on the west. Although the region has witnessed a large number of moderate to large earthquakes in the past, ground motion data of events is sparse. Consequently, there exists a lack of understanding on the attenuation characteristics of the region. Owing to these circumstances, the most suitable Ground Motion Prediction Equation (GMPE) is selected from the regions of the world with the help of geological and seismological information of the region. Based on such study, updated regression model for Eastern Northern America (ENA) that is derived from simulation of wave attenuation model is selected. Subsequently, the model is employed to predict structural response recorders (SRR) data and MMI data for Bhuj earthquake. Results show improved agreement in the prediction when the upper crust amplification effect is incorporated. These results can be used subsequently to undertake deterministic and probabilistic seismic hazard analysis of the region.

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