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An Evaluation of the Applicability of the NGA 2008 and NGA 2014 Models to Ground-Motion Prediction in the Iranian Plateau

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The selection of Ground Motion Prediction Equation (GMPE) is one of the key elements in the seismic hazard analysis specifically for high seismic zones such as Iran plateau. The variety of available GMPE models makes this selection a scientific challenge. Therefore, the stability assessment of a set of GMPE models are investigated in this paper by employing the new emerged Re-Sampling Analysis (RSA) methodology. Two GMPE categories are examined in this paper which are: (1) The NGA-WEST1 GMPE models, and (2) The NGA-WEST2 GMPE models. The ground motion database in this study consists of 691 acceleration time series resulted from 85 seismic events. The RSA results show meaningful bias versus magnitude, distance and shear wave velocity for the given GMPE models. Based on the RSA methodology, the better model is the one in which the bias decreases when the size of sampling increases. Hence, both of the NGA GMPE groups show poor performance based on the RSA results.