

Preliminary Seismic Hazard Mapping of Papua New Guinea

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Abstract : In this study the level of seismic hazard in terms of Peak Ground Acceleration (PGA) was calculated for return period of 475 years, using modeled seismic sources and assigned ground-motion equations. The calculations were performed for bedrock site conditions ($V_{s30}=760$ m/s). From the results it is evident that the seismic hazard reaches its maximum level (i.e. $PGA \approx 1g$ for 475 yr return period) at the Huon Peninsula and southern New Britain regions. Disaggregation analysis revealed that moderate to large earthquakes occurring along the New Britain Trench mainly control the level of hazard at these locations. The open-source computer program OpenQuake developed by Global Earthquake Model foundation was used for the seismic hazard computations. It should be emphasized that the presented results are still preliminary and should not be interpreted as our final assessment of seismic hazard in PNG.

Keywords : probabilistic seismic hazard assessment, Papua New Guinea, building code, OpenQuake

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