

Effect of Long-distance Earthquake from Philippines and Sulawesi to Sabah Region

Abstract

Sabah is known for its active earthquake activities, especially in Ranau, Kudat and Lahad Datu areas. The effects of local earthquake can reach MW 6.0. Furthermore, Sabah was also hit by earthquakes from neighbouring countries such as Sulawesi and Philippines. These countries produce highly active earthquakes that can reach as high as MW 8.6. The increase in the frequency of earthquakes is one of the concerns of the Sabah government for the safety of its people because most people live in concentrated areas near the coast. This study shows the effects of major earthquakes from the Philippines and Sulawesi which have been recorded between 1900 to 2020 and analyzed in terms of peak ground acceleration (PGA). The eastern region of Sabah is adopted in the analysis for the effect of long-distance earthquakes, as these areas are close to both countries. The analysis uses standard seismic hazard assessment procedure with compilation magnitudes greater than MW 5.0. In the final analysis, it is shown that the effects of large earthquakes from both countries are relatively small compared to the effects of local earthquakes.