

ABSTRACT

Semarang Regency was one of the areas affected by the earthquake. This happens because it is located north of the subduction zone and has active faults, so research is needed to identify the impact of earthquakes in Semarang Regency as an initial action in disaster mitigation efforts. The aim of this research is to determine the distribution of PGA values in the Semarang Regency area and to assess the seismic hazard due to earthquakes based on a map of the distribution of PGA values in the Semarang Regency area. The method used is the Probabilistic Seismic Hazard Analysis (PSHA) method using earthquake catalogs from BMKG, USGS, IRIS, and ISC. The earthquake source data was then processed using ZMAP and R-CRISIS software. The results of seismic hazard analysis in the Semarang Regency area for a probability of exceeding 10% in 50 years or an earthquake return period of 475 years in bedrock with a period of 0 seconds obtained a PGA value ranging from 0.368–0.844 g, for a short period of 0.2 seconds the PGA value obtained ranged from 0.647. –1.773 g, for a period of 1 second the PGA value obtained ranges from 0.320–0.852 g. The highest PGA value is in West Ungaran District with a value of 0.844 g. The lowest PGA value is in Kaliwungu District with a value of 0.458 g. The danger of earthquakes in the Semarang Regency area is influenced by the active fault zones in Semarang Regency.

Keyword: PSHA, Seismic Hazard, R-CRISIS