

Lesser Sunda Islands earthquake inter-occurrence times distribution modeling

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Abstrak

This paper is aimed towards analyzing and modeling earthquake interoccurrence times in the Lesser Sunda Islands region using Weibull distribution. The data were classified into three categories, based on their magnitude; i.e. weak, medium, and strong earthquakes. Cumulative distribution functions and hazard rates are also explored in order to obtain the characteristics of earthquake inter-occurrences time data. Empirical results indicate the probability and rate of an earthquake recurrence time with a certain magnitude and in a certain time. Medium and weaker earthquakes have a higher chance of occurrence, reaching up to a 100% probability for the following 60 months. Meanwhile, the stronger earthquake has a 75.80% probability of occurrence. It can be seen that the earthquake occurrence probability increases together with the time increment factor.