



Frequency-amplitude statistics and recurrence time interval statistics of slip events on the creeping section of the San Andreas fault

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The frequency-size and recurrence time interval statistics at a point on a fault is an important question in seismic hazard assessments. Does a point on a fault obey the same statistics as earthquakes in a region do? This is difficult question to answer because the number of repetitive earthquakes on a particular fault that have been observed is small. In order to overcome this difficulty we consider slip events on the creeping section of the San Andreas fault in central California. Sequences of up to 100 events are obtained from creepmeter records. We compare the statistical distribution of recurrence times with the Brownian passage-time, lognormal, and Weibull distributions and using goodness-of-fit tests find that the Weibull is the preferred distribution. We also consider the frequency-amplitude distribution of slip events. We find that the data clearly do not obey a Gutenberg-Richter distribution. Instead there is a uniform distribution of event sizes for a large fraction of events.