

## Foreshocks and short-term forecasting: comparisons between real seismicity and synthetic catalogs

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Some of the statistical characteristics of foreshocks in the Japan Meteorological Agency (JMA) earthquake catalog are similar to those in synthetic catalogs simulated by the space-time epidemic-type aftershock sequence (ETAS) model or even the space-time nonhomogeneous Poisson process. However, they are quantitatively different from each other. Also, the information gain of a foreshock probability forecasting for real seismicity is significantly larger in comparison with that of synthetic catalogs. We discuss the reasons for such differences between the JMA and the synthetic catalogs.

Keywords: Foreshocks, short-term forecasting, JMA earthquake catalog, synthetic catalogs simulated by ETAS model, statistical characteristics of foreshocks, foreshock probability forecasting