

Consideration of time scale of simulator made of nonlinear oscillators for seismic activity

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Maeda and Yokomori(1999) constructed a simulator made of nonlinear oscillators for seismic activity. It could reproduce not only statistical characters of seismic activity but also time series of actual seismic activity. They applied the simulator to several regions and found that the simulations were not necessarily successful, so accuracy of the simulator was not high.

In this research, we take into account of the branching effect of Poisson process. We coordinate the time scale of event data of the model and actual hypocenter data by matching average incidence rates of two data. However, two kinds of data with different ratios of aftershocks to total events cannot be coordinated the time scales in this method. Then, we prepared the suitable event data by adjusting the model parameters in order to fit the ratios of aftershocks.

This time, we selected three areas of the east part of Hokkaido and applied the simulator to them. The simulation reproduces the time series feature of each area and it is thought that the accuracy of the simulator improved.