

The analysis of the seismicity in the Antarctica Plate by the statistical method

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We use a statistical method for the seismic activity around Antarctic plate and examine the seismic activity. The 1998 Balleny earthquake is one of the great earthquake occurred around Antarctic plate. The earthquake hardly occurred in the region around the Balleny earthquake before 1998. On the other hand, the earthquake often occurred in the region after the Balleny earthquake.

Using the statistical method called the Epidemic Type Aftershock-Sequence (ETAS) model, we examine the change of stochastic structure of seismic activity. This method includes background activity of constant occurrence rate in time and aftershock activity. By deriving the inversion parameters of this model, we can compare the background activity at each point in the object region, the occurrence rate of aftershocks and the decay rate of aftershock. So, we can confirm the increase of the background activity after Balleny earthquake.

However, the seismic observations around Antarctic plate have some problem for the detection capability of earthquakes and time variations. We have to consider this point.