

Layered structure of the upper mantle and the crust revealed in the time series analyses of the aftershocks of the 2018 Hokkaido Eastern Iburi Earthquake

*Takayuki Kawabe¹

1. Faculty of Education, Arts and Sciences, Yamagata University

The 2018 Hokkaido Eastern Iburi Earthquake, occurred at September 6, 2018 03:07:57 am. Many aftershocks occurred along a plane which is striking north-northeastward and is dipping to the east at an inclination of 70° . The depth of the upper limit at which aftershocks occurred has been becoming shallow over time.

According to time series analyses of the aftershocks, four depth zones are recognized. They are as follows;

Depth zone of 45 to 30 km deep: Many aftershocks occurred in the zone just after the main shock.

Depth zone of 30 to 20 km deep: Less aftershocks occur. However the magnitude of many of them are larger.

Depth zone of 20 to 10 km deep: Many small aftershocks were active. They distribute not uniformly but on multiple radial lines, and they occurred line by line.

Depth zone of 10 to 5 km deep: less aftershocks occur. However the dip of the plane on which aftershocks occurred is gentle as 45°

These recognized zones seems to show the difference in physical properties of the underground geology. According to the slow development of aftershock and distribution form of epicenters suggest strongly the involvement of the deep hot water flow along the fault plane.

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