

A review of seismicity, structure and tectonics in the Arctic region

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The "Arctic" region, where the North Pole occupies the center of the Arctic Ocean, has been affecting the environmental variation of the Earth from geological time to the present. However, the seismic activities in the area are not adequately monitored. Therefore, by conducting long term monitoring of seismic phenomenon as sustainable parameters, our understanding of both the tectonic evolution of the Earth and the dynamic interaction between the cryosphere and geosphere in surface layers of the Earth will increase. In this paper, the association of the seismicity and structure of the Arctic region, particularly focused on Eurasian continent and surrounding oceans, and its relationship with regional evolution during the Earth's history is studied. The target areas cover representative tectonic provinces in the Eurasian Arctic, such as the wide area of Siberia, Baikal Rift Zone, Far East Russia, Arctic Ocean together with Greenland and Northern Canada. Based on discussion including characteristics of seismicity, heterogeneous structure of the crust and upper mantle, tectonic history and recent dynamic features of the Earth's surface in the Arctic are summarized.

Keywords: Arctic region, seismicity, crustal structure, tectonics, glacial earthquakes