



Seismic Monitoring of the Arctic region by the International Monitoring System CTBTO

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The seismic activity of the Arctic region is less studied in terms of geophysical explorations because of its harsh climatic conditions and low density population. Nowadays increasing the importance of this area leads us to conduct researches in collaboration with relevant international and regional organizations. The International Monitoring System (IMS) network is setup by Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) as the key element of the CTBT verification regime providing data from 50 primary and 120 auxiliary seismic stations deployed all over the world. The aim of this study is to quantify the effective detection capability of the current state of IMS network in order to monitor the Arctic region and evaluate the accuracy of seismic event locations based on the Reviewed Event Bulletin (REB) issued by the CTBTO.

A total of 3.928 earthquakes recorded by the IMS Network and reviewed by analysts at the International Data Centre (IDC) during the period from January 2009 to December 2015 at an area above 60°N surrounding the North Pole have been selected. The studied areas cover several tectonic provinces of the Eurasian Arctic, such as Fennoscandia, Eastern Siberia together with Iceland, Greenland, northern Canada and Alaska.