

Earthquakes in Greenland – a review

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Greenland has a long history of earthquake monitoring, which began on the island of Disko in western Greenland in 1907, where a single seismograph was in operation for a short period, until 1912. The permanent monitoring was initiated in 1927 with seismographs in the south and eastern Greenland, and the monitoring has gradually been increased since then. Today 20 broad band seismometers are in operation in Greenland with realtime data connections and 7 are installed without. The vast increase in seismographs in Greenland is largely possible due to international collaboration in general and the GLISN project in particular.

The number of earthquakes recorded in Greenland reflects the number of stations installed over the years. In the first period, up till the end of the last century, the earthquake monitoring was much dependent on data contributions from neighboring seismic networks in Canada, Svalbard and Iceland and from teleseismic observations.

The recent increased monitoring has showed that the majority of onshore or near coastal earthquakes occur in 7 regions; 2 on the west coast, 2 in the north, 2 on the south-east coast and one in the south. The monitoring also shows earthquake activity below the ice cap, an area that for many years was considered aseismic.

This presentation will give a give an overview of the earthquake activity and monitoring in Greenland and address a possible future change of earthquake hazards in relation changing climate and changing ice load.