Geological Survey of Denmark and Greenland

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# Cryo-seismological recordings from community based seismic stations

GEUS and UiB with partners pilot community based seismic stations for cryo-seismological recordings in West-Greenland. The purpose is to collect data from the local seismic activity, in order to improve the accuracy of earthquake locations and detection threshold and thereby gain new information on the earthquake hazard in the region. The data could potentially also provide new insight on seismic signal released in the cryosphere such as glacial events or icequakes.

Since medio 2018 the monitoring by permanent seismological networks in West Greenland has been complemented by community-based monitoring seismometers in Disko Bay (Fig. 1 and 2). The sensors are fully automatic; when they are connected to an internet router and powered up they adjust their inner clock and starts sending live data to the internet server that collect data from more than 1000 similar sensors worldwide.

Figure 1. Gerth Olsen, Akunnaaq, with seismograph before connecting it to electricity and a router and placing it on the rock below his house. Photo: F. Danielsen

The data are shared in real-time at the website https://raspberryshake.org/ and are also included in the GEUS' earthquake bulletin (https://www.geus.dk/natur-og-klima/jordskaelv-og-seismologi/registrerede-jordskaelv-i-groenland/)
The data improve the detection and location of cryo-generated seismic events and earthquakes and other events that generate seismic signals. Furthermore, the data provide information on the magnitude of local ground motions during felt earthquakes.

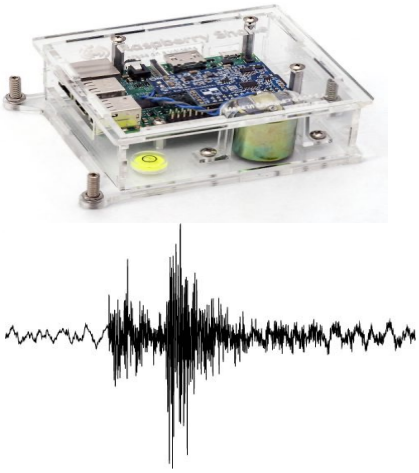

Figure 2. Upper: photo of the Raspberryshake seismometer, Lower: a seismogram showing the recording of a magnitude 2.0 earthquake located 122 km South-West of Akunnaaq, May 21st 2018.

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