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2.3-P07. Earthquake swarms in Greenland

Detecting small earthquakes is a challenge in large, sparsely populated regions such as Greenland, where local seismographs are few and far between. Earthquake swarms consisting of tens to hundreds of shallow earthquakes with magnitudes less than 4 occur in Greenland even though it is a tectonically stable, intraplate environment. The enormous distances between events and detecting stations are a challenge in the analysis. The seismograph coverage of Greenland has vastly improved since the international GLISN-project was initiated in 2008, but still it is a common situation to have less than five seismographs located within 1000 km of an event. Some of the larger earthquakes in the swarms, with a magnitude between 3 and 4 are detected by the IMS on the large seismograph arrays located up to 65 degrees away. The analysis of Greenland earthquake swarms is significantly improved by including IMS waveform data as well as SEB phases. The swarm earthquakes have very similar waveforms, so results obtained for the larger events can be used as a priori knowledge for the rest. One of the major challenges is the lack of local velocity models.

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Track Classification: 2. Events and their characterization