

Geological Survey of Denmark and Greenland – GEUS

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GEUS

The goal for the seismic service at GEUS is simply; to monitor and register earthquakes and other seismic activity including possible nuclear explosions. For this purpose GEUS maintains an earthquake database covering registered seismic activity in the Kingdom of Denmark. Both the resources for and the quality of the database, have varied a lot since the establishment of the seismic service in 1928. Nevertheless, the seismic service has undergone several technological paradigm shifts since the establishment: WWSSN, digital recording and GLISN, all resulting in an increased detection level. The most recent challenge forced upon the seismic service is automatic processing of seismic data, from recording to bulletin. The outcome of this shift in operation is still unclear, but the preliminary results show that automatic detection especially of events in Greenland maybe is too great a challenge, mainly due to the low station coverage.

Recent activities at the seismic section at GEUS: We ended the microseismic monitoring in Northern Jutland by OKT 2015 where the 6 stations were recovered. A new broad band station was installed in Northern Jutland on OCT 8th, 2015, with the ISC code for this station is: OVD. Together with partners from Sweden and Finland we took part analyzing small finish earthquakes for NKS. North of Copenhagen we conducted a short noise study before the summer of 2016 and by the end of 2016 we will take part in the EU project INTAROS with colleagues from UiB. For the installation of a new broad band seismometer in Southern Jutland we are preparing a posthole installation. A noise survey has been conducted and a site is now selected, the ISC code for this new station is: SSRD. To meet the request from the ISC of providing seismic bulletins within a year, we are now providing reviewed monthly bulletins in Nordic format. The first reviewed monthly bulletin was that of April 2015.

Apart from the destructive earthquake in Italy and the nuclear explosion in the DPRK, the most significant seismic events recorded by the seismic service at GEUS in the recent period, are a sequence of earthquakes in the Disko Bay area in West Greenland. Since the beginning of the sequence on April 5th 2016, 95 earthquakes have been recorded. The two largest earthquakes measured 4.5 and 4.7 mb, respectively.