

Seismicity of the Nordland area, Norway

Jan Michalek, Lars Ottemoeller, Berit Marie Storheim, Marte Louise Strømme

University of Bergen, Norway

The Nordland area (65-70N; 8-18E) is tectonically active part of Norway. Enhanced seismicity may reflect on off-shore subsidence combined with the uplift of landmasses usually attributed to glacial isostatic adjustment (related to Pleistocene unloading). Detailed monitoring of seismic activity in the Nordland area was done in August 2013 – June 2016 as a part of the NEONOR2 project and information obtained from analysis of earthquakes together with geodetic data should be the key inputs for modeling of deformation and uplift patterns and their mechanisms in the region. Local network of 26 broad-band stations was deployed and together with the permanent NNSN stations in that area it contained 33+ stations within span 350 x 200 km. About 1250 earthquakes of $M > 0.0$ was recorded during the project period and new map of seismicity of that area was retrieved.

The main aim of the project is to reveal the stress field in that particular region and therefore determination of stable focal mechanisms is crucial. Despite the high number of stations, enough clear polarity readings (≥ 6) were obtained for only about 20 strongest events ($M < 3.2$). Hence we developed methodology using automatic amplitude readings and the standard tools (FOCMEC, HASH) for focal mechanism determination which are implemented in SEISAN. The methodology is tested using the strongest events and conclusions for further application are suggested.