

Neotectonics in Nordland; NEONOR 2

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The Nordland shore region is known to be seismically active with deep local sediment basins on the continental shelf that stretches some 200 km west of the coastline. The offshore areas west of Nordland have also been attractive for the petroleum companies with potentials for new resources. The multidisciplinary NEONOR 2 project is funded by the Norwegian Research Council in cooperation with ten petroleum companies and include seven research institutions led by the Norwegian Geological Survey (NGU). The activities started mid 2013 and is closing early 2017. The prime objective is to promote understanding of regional-scale stress and strain dynamics in the Nordland area through a detailed monitoring of seismicity and to link this to geodetic movements, in situ stress state, and in turn also to tectonics, exhumation and isostatic processes through modeling. Under these overarching goals the following activities have been conducted with significant achievements:

- A new seismicity map of the Nordland region has been obtained and linkage to mapped and hitherto non-mapped faults has been done.
- Inversion methods have been applied to estimate the regional stress field by integrating GPS, DInSAR, seismic data (focal mechanisms) and in situ stress.
- The contribution of Pleistocene sediment redistribution has been quantified using numerical modeling with basis in the present-day stress field.
- Pleistocene palaeo-stresses and palaeo-temperatures are estimated using numerical modeling.