Fault plane solutions of the earthquakes in Nordland, Norway

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This study is a part of the ongoing NEONOR2 project which is carried out in Nordland, norther Norway. This work aims to define the fault plane solutions (FPS) of the earthquakes in the study area both onshore and offshore. The improved station coverage in Nordland with 26 temporary seismic stations in addition to the permanent deployments in Norway and Sweden enables to achieve this task with higher precision compared to the previous studies. To obtain the FPS we used three different programs: FOCMEC, HASH and FPFIT, which are implemented into the SEISAN program package. From the recorded data we obtained nearly 120 FPS of the earthquakes and assigned them with the quality factors. We grouped the earthquakes into several groups according to their geographical locations, and investigated the obtained results in each group separately. The overall results in the study area show the dominating normal type of faulting and the N-S to NW-SE direction of the compressional stresses. In the offshore area the obtained directions of the faults indicate the dominant NE-SW trend, i.e., along the coast of Nordland, which complies well with the maps of the major tectonic faults.