



## **The Western Barents Sea: where is the Caledonian Deformation Front?**

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The basement architecture below the Paleozoic sedimentary basins is still not fully understood in the Western Barents Sea region. It has been proposed that the early Devonian Caledonian orogeny has formed structural framework over which major basins have developed lately. However, the geometry of the Caledonian suture zone (its location, orientation and the extent of the deformation front) is still poorly constrained and is ambiguous in the Barents Sea. The crustal evolution of the Barents Sea and the basin-basement interaction is heavily dependent on the spatial extent and orientation of the Caledonian Deformation Front (CDF). In 2014 an active marine seismic experiment was conducted in the Western Barents Sea. One of the goals of the experiment is to discriminate between two existing models for orientations of the CDF: north-south from the potential fields data, and southwest-northeast from seismic data. We also aim to constrain the location of the CDF offshore northern Norway. We present the joint interpretation of collocated newly collected wide-angle seismic data (Ocean Bottom Seismometers) and reprocessing of the reflection seismic dataset (Multi-channel seismics) collected in the mid 1980's, using modern computational techniques. The two seismic methods provide best resolution at different depth ranges, and in our modeling we combine the results from the two methods to constrain the location of the CDF along transect running Northwest-Southeast across the Western Barents Sea.