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# A lithosphere-scale 3D-structural model of the Barents Sea and Kara Sea region

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The Barents Sea and Kara Sea region is located in the European Arctic. Due to its hydrocarbon potential this region is in focus of an increasing number of scientific and commercial studies. Although these studies mostly range from reservoir to sub-basin scale and thus have contributed to the knowledge about the local and specific tectonic and sedimentary histories of the corresponding subregions, there have been limited attempts to understand the region as a whole.

We integrate multi-disciplinary data including well information, interpreted refraction and reflection seismic data and previously published 3D- models into a lithosphere-scale 3D-structural model. This model resolves the following surfaces: topography and seafloor, base Cenozoic, mid-Cretaceous, base Cretaceous, intra Permian, intra Carboniferous, top crystalline basement, Moho and lithosphere-asthenosphere boundary. Each corresponding layer is characterised by rock physical properties such as porosity and density. To analyse the density configuration of the subsedimentary lithosphere, in particular the distribution of high-density bodies, we perform 3D gravity modelling. The presented model provides an ideal base for further studies on the present-day thermal field or the geodynamic evolution of this region.