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A preliminary crustal thickness map of the Arctic Ocean

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The recent remarkable increase in the amount of new data collection and compilations from the Arctic Ocean calls for a re-evaluation of our knowledge about the crustal structure and the tectonic evolution of the Arctic basins. We aim to derive the crustal structure of the High Arctic region by taking into account an updated bathymetric grid (IBCAO v3.0, Jakobsson et al., 2012), newly published gravity anomaly grids and the TeMAr sedimentary thickness map (Petrov et al., 2013). A lithosphere thermal gravity anomaly correction (Alvey et al., 2008, Minakov et al., 2012) is taken into account for defining crustal thickness by gravity inversion. Since the age and nature of the Amerasian Basin crust is still debatable, we test various scenarios of the regional geological evolution and the results are compared and improved by comparison with avalable published crustal models along seismic profiles. The results are discussed together with recent models of the Arctic lithosphere and the upper mantle and they will be subsequently incorporated into improved tectonic models of the Arctic Ocean.

References:
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