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# Moho depth and residual topography of the Antarctic continent

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A new Moho depth map for the Antarctic continent has been recently assembled (ANTMoho), merging information retrieved from geophysical and geological studies selected from the literature. A large volume of old and new data have been analyzed: from active seismic prospection,including DSS profiles acquired by Soviet Union field experiments, to recent passive seismic receiver function and geological studies. ANTMoho has a reference lateral resolution of 1 degree. The oldest Archean and Proterozoic crust of East Antarctica has a thickness of 36–56 km (with an average of about 41 km). The continental crust of the Transantarctic Mountains, the Antarctic Peninsula and Wilkes Basin has a thickness of 30–40 km (with an average Moho of about 30 km). The youngest rifted continental crust of the West Antarctic Rift System has a thickness of 16–28 km (with an average Moho of about 26 km). The mean Moho depth of the whole model is 33.8 km. We compare this new model to other available for the whole continent (Bassin et al., 2000; Block et al., 2009) and study the possible geodynamic consequences calculating the residual topography – an indicator of dynamic response to large-scale mantle flow. We adopt the semianalytical methodology implemented in the HC code (developed and maintained by Prof. T. Becker). The spatial resolution is limited by the L=127 of the input model. The Transantarctic Mountains appear not to be isostatically compensated, such as the neighboring Wilkes Subglacial Basin. East Antarctica on a large scale does not show significant uncompensated topography. There are however some smaller-scale residual topography features, that correlate with sub-glacial topography and that may indicate some limitation in resolution or laterally-variable crustal density. Better knowledge of crustal structure is therefore an important tool for better understanding of the complex dynamic processes acting at a regional scale.