The Geochemistry and Geophysics of the Antarctic Mantle

Edited by **A. P. Martin and W. van der Wal**

This Memoir is the first dedicated to the Antarctic mantle. It is a cross-disciplinary reference work combining geochemistry and geophysics to characterize Antarctic mantle properties. Through observations and modelling the mantle structures, compositions and dynamics are characterized at regional and continental scales by subject experts.

The Memoir reviews all known occurrences of sub-continental mantle xenoliths in igneous rocks. These studies are presented by region as southern or northern Victoria Land, Marie Byrd Land, the Antarctic Peninsula, East Antarctica and the sub-Antarctic Islands. Sub-oceanic mantle in tectonically emplaced and abyssal settings is also considered where known. This is complemented by a continental-scale mantle xenolith overview, mantle characteristics from igneous rocks and a quantitative mantle fabric study. State-of-the-art, continental-scale geophysical overviews of the Antarctic mantle are presented by discipline as seismology, gravity and magnetics, magnetotellurics, rheology, glacial isostatic adjustment, mantle convection and palaeotopography. This Memoir will be the reference for all researchers interested in the Antarctic mantle and its role in dynamics that shape the Antarctic surface and ice sheets.

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