

T53C-1610

Crustal Structure Across Northern Victoria Land, Antarctica, From Receiver Function Analysis

Demartin, M

demartin@ingv.it

Istituto Nazionale di Geofisica e Vulcanologia, Centro Nazionale Terremoti, Via Vigna Murata 605, Rome, 00143 Italy

Roselli, P

roselli@ingv.it

Istituto Nazionale di Geofisica e Vulcanologia, Centro Nazionale Terremoti, Via Vigna Murata 605, Rome, 00143 Italy

Piana Agostinetti, N

piana@ingv.it

Istituto Nazionale di Geofisica e Vulcanologia, Centro Nazionale Terremoti, Via Vigna Murata 605, Rome, 00143 Italy

Cattaneo, M

cattaneo@ingv.it

Istituto Nazionale di Geofisica e Vulcanologia, Centro Nazionale Terremoti, Via Vigna Murata 605, Rome, 00143 Italy

Global crustal model, from gravity studies, imaged a thick crust (>40 km) under Eastern Antarctic craton (EAC). This global trend ends abruptly west of the Transantarctic Mountains (TAM), which border EAC along its western margins. There, the crust raises up to about 20 km. While this model points out the difference between EAC and the Ross sea crustal structures, its intrinsic spatial resolution gives little help to solve some regional geophysical issues, like the TAM orogenesis and the formation and nature of the Wilkes Basin. In this study, teleseismic Receiver Functions (RFs) are used to image the S-velocity crustal structure in finer details. We computed RFs from teleseismic events recorded during three different austral summer campaigns: BackTAM, WIBEM and WISE. Broadband seismic stations were deployed along a transect which spans from the coast of Northern Victoria land (NVL) to the far interior of the EAC plateau. The transect, almost perpendicular to the regional TAM axis, came across four different geological/geophysical settings: the alloctonous terranes of the NVL, the TAM sector, the Wilkes Basin and the EAC plateau. Each area shows peculiar crustal structures and we propose both finer local S-velocity models and a regional crustal model.

DE: 7205 Continental crust (1219)

DE: 8015 Local crustal structure

DE: 8103 Continental cratons

DE: 8169 Sedimentary basin processes

DE: 9310 Antarctica (4207)

SC: Tectonophysics [T]

MN: 2006 Fall Meeting