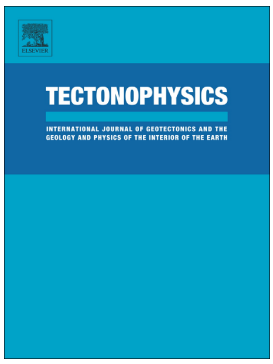

The crustal structure of the continental margin east of the Falkland Islands

Claudia Monika Schimschal, Wilfried Jokat

PII: S0040-1951(17)30496-1
DOI: doi:10.1016/j.tecto.2017.11.034
Reference: TECTO 127700

To appear in: *Tectonophysics*

Received date: 7 June 2017
Revised date: 6 November 2017
Accepted date: 27 November 2017

Please cite this article as: Claudia Monika Schimschal, Wilfried Jokat , The crustal structure of the continental margin east of the Falkland Islands. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Tecto(2017), doi:10.1016/j.tecto.2017.11.034

The crustal structure of the continental margin east of the Falkland Islands

Claudia Monika Schimschal[a,*], Wilfried Jokat[a,b]

[a] Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research, Department of Geophysics, Am Handelshafen 12, 27570 Bremerhaven, Germany

[b] University of Bremen, Department of Geosciences, Klagenfurter Strasse 4, 28359 Bremen, Germany

[*] Corresponding author.

E-mail addresses: Claudia.Klemt@awi.de (C.M. Schimschal), Wilfried.Jokat@awi.de (W. Jokat)

Abstract

The 1500 km long Falkland Plateau is the most prominent morphological structure in the southern South Atlantic Ocean, which crustal composition and development is mainly unknown. At the westernmost boundary of the plateau, the Falkland Islands' Precambrian geology provides the only insight into basement structure and age. The question of whether continental basement of a similar age and origin underlies the Falkland Plateau further east is strongly disputed. We present new high quality constraints on the crustal fabric of the plateau east of the Falkland Islands, based on wide-angle seismic and potential field data acquired in 2013. The P-wave velocity model, supported by amplitude and density modelling, shows that the Falkland Plateau Basin is filled with 8 km of sediments. Continental crust of 34 km thickness underlies the Falkland Islands. The eastern continental margin of the Falkland Islands can be