



## **Lithospheric structure of Southern Africa deduced from the Southern African MT Experiment (SAMTEX) project**

**A.G. Jones** (1), M.P. Hamilton (1), M. Miensopust (1), M.R. Muller (1), R.L. Evans (2), C.J.S. Fourie (3), T. Ngwisanyi (4), D. Hutchins (5), S.F. Evans (6), A. Mountford (7), and the SAMTEX team

(1) Dublin Institute for Advanced Studies, 5 Merrion Square, Dublin 2, IRL. (2) Woods Hole Oceanographic Institution, Clark South 172, Woods Hole, 02543 MA, USA. (3) Council for Geosciences, 280 Pretoria Street, Silverton, Pretoria, 0001, ZAF. (4) Geological Survey of Botswana, Private Bag 14, Lobatse, BWA. (5) Geological Survey of Namibia, 1 Aviation Road, Windhoek, NAM. (6) DeBeers Group Exploration, Private Bag X01, Southdale, Johannesburg, 2135, ZAF. (7) Rio Tinto Exploration, 6 St James's Square, London, SW1Y 4LD, GBR. (alan.jones@dias.ie)

The Southern African Magnetotelluric Experiment - SAMTEX - is a multi-institutional, multi-national, geophysical project being undertaken by a consortium comprising academia, industry and government organizations. The primary objective is to determine the lithospheric geometries of the major Archean cratons and their Proterozoic bounding belts in southern Africa with a view to elucidating Archean and Proterozoic tectonic processes of formation, deformation and destruction, and comparing those processes to their modern counterparts. To date, MT data have been acquired in three phases of acquisition over three years at over 550 sites on over 900 line kilometres in a spatial area exceeding a million square kilometres, making this the largest survey of its kind ever.

This paper will review the data acquired, showing high quality data and also problem data that still require advanced processing approaches. In addition, the results of modelling will be shown and discussed. In particular, the relationship between lithospheric electrical parameters and diamondiferous kimberlite pipes will be highlighted.