



## **Changing magnetic field across Southern Africa: onset of a reversal?**

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Recent studies have identified distinct patches of reversed magnetic flux at the poles and below Africa. The most prominent feature in this respect is the growing patch of reverse magnetic polarity beneath Southern African Continent. To give an indication of the recent changes, the distribution and evolution of the radial magnetic field component at the core-mantle boundary during the last century will be presented and discussed. The *gufm1* model used here shows under the Southern African Continent a region of reversed field direction which propagates north-eastward. In this contribution it will be shown that the magnetic activity within these structures directly relates to the geomagnetic impulses, previously reported at the Earth's surface. This region of active variations, where wave-like structures propagate, can be a key parameter in providing new constraints on the intricate dynamics of the core. Moreover, the Southern African growing patch might also be associated with the present rapid decrease of the dipole field, which has been suggested to eventually be the state through which the geodynamo could also possibly go before reversing.

In order to better understand the behavior of the geomagnetic field in this area, recent efforts have been made in re-measuring the Southern African Continent repeat stations network (South Africa, Namibia and Botswana). This network, consisting of 40 repeat stations, was re-occupied in fall 2005. The first results obtained from these new ground-based data, combined with satellite data will also be presented.