



## **TEMPO: an ESA-funded project for uncovering significant features of the South Atlantic Anomaly**

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In this work we provide the last results of the ESA (European Space Agency) funded project TEMPO (“Is The Earth’s Magnetic field POtentially reversing? New insights from Swarm mission”). The main goal of this project is to analyse the time and spatial evolution of one of the most important features of the present geomagnetic field, i.e. the South Atlantic Anomaly (SAA). The region covered by this anomaly is characterized by values of geomagnetic field intensity around 30% lower than expected for those latitudes and extends over a large area in the South Atlantic Ocean, South America, South Africa and the Eastern Pacific Ocean. This large depression of the geomagnetic field strength has its origin in a prominent patch of reversed polarity flux in the Earth’s outer core. The study of the SAA is an important challenge nowadays not only for the geomagnetic and paleomagnetic community, but also for other areas focused on the Earth Observation due to the protective role of this potential field against the charged particles forming the solar wind. A further increase of the SAA surface extent could have dramatic consequences for human health and technologies because a larger number of solar charged particles could reach the Earth’s surface.