**NEW MAGNETIC GRID OF THE NORTH ATLANTIC**

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**ABSTRACT**

Existing kinematic studies on the evolution of the Azores Triple Junction have been focused on the Eurasian-North American plate pair. Up to now, magnetic compilations for the North Atlantic are not good enough to improve the identification of young chrons on the Africa-North America plate pair and so models like Klitgord and Schouten (1986) have been used to describe the average motion south of the Azores.

We present here a new compilation of magnetic data between Kurchatov and Hayes fracture zones, based on the re-processing of available (and new) magnetic profiles using CM4 model. We use this compilation to identify magnetic chrons up to chron M25, extending to the south the kinematic studies of Luis and Miranda (2008). We aim to understand the most important kinematic changes at the Azores Triple Junction and their impact on the segmentation pattern of the MAR and the formation of the Azores Spreading Axis.

**DATA COMPILATION**

In a recent work (Luis and Miranda, 2008) we improved locally the existing magnetic compilations of the North Atlantic, merging marine and aeromagnetic data.

All anomaly data was computed using the CM4 model whenever it falls inside the model validity period (up to 2002.7). Anomalies for data acquired after 2002 where computed using the IGRF model to derive the secular variation and a daily variation computed with the CM4 model updated for the atmospheric coefficients.

**CONTINUOUS REDUCTION TO THE POLE**

The method used here follows previous work by Galdeano (1980) and Miranda *et al*. (1997) and is fully described in Luis and Miranda (2008). The computations are carried out in both the frequency and the space domains. The study area is decomposed in small size windows. Inside each of those windows, or bins, we calculate the set of filter coefficients for its central point, given by:



Where (**) and (**) are the direction cosines of the magnetization vector and the main field, respectively, (*u,v*) are the coordinates in the Fourier domain and  is . For each point of the bin a specific filter is recomputed using α, β, γ, , μ and  derivatives for its central point, and a first order Taylor series expansion. Both the ambient field and the magnetization can have different directions; so, there are six independent derivative filters. The set of coefficients is then FFT inverted and the RTP is carried out on the current bin, by convolution in the space domain.

The information about the magnetization direction is obtained assuming a geocentric dipole approach for the remnant magnetization and plate motion parameters to compute the present direction of the remnant magnetization vector.

**ISOCHRON IDENTIFICATION**

**ACKNOWLEDGEMENTS**

**REFERENCES**

**FIGURE CAPTIONS**