

Abstract:

The main goal of this paper is to use the 2D Directional Continuous Wavelet Transform (DCWT) for structural boundaries delimitation from geomagnetic data. The proposed idea is based on the mapping of maxima of the modulus of the 2D DCWT for each scale used in the DCWT calculation. Application to synthetic data shows robustness of the technique. Application to the real geomagnetic data of In Ouzzal area located in the West of Hoggar (Algeria) shows clearly the strength of this last. Comparison with the analytic signal solutions exhibits that the DCWT is able to predict a pattern of boundary that is hidden by the noise in the analytic signal and eliminated by a threshold. The proposed method proves to be more powerful easy to use and versatile where classical methods of potential field interpretation fail or are very constraining