



Structural edges delimitation from geomagnetic data using the wavelet transform and the analytic signal

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In this paper we have analyzed the aeromagnetic data using the 3D analytic signal technique combined with the 2D continuous wavelet transform (CWT). The objective is to delineate structural boundaries using the spatial distribution of maxima of modulus of the CWT of the analytic signal (AS). The proposed idea has been applied to synthetic and real geomagnetic data of In Ouzzal area, it is located in the western of Hoggar (Algeria). Obtained results are compared with geological map and analytic signal solutions. It shows that with this approach we are able to resolve the problem of noise effect on the analytic signal solutions, and the reduction to the pole in the contacts identification by the CWT. Our method shows a good precision where geological contacts are known, it is very useful for structural geology.