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Interactive comment on "Structural features derived from a Multiscale Analysis and 2.75D Modelling of Aeromagnetic Data over the Pitoa-Figuil Area (Northern Cameroon)" *by* Voltaire Souga Kassia et al.

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The entire paper needs to be rewritten to enhance the readability of the manuscript and must certainly must be read by a native English speaker. 1. The manuscript needs to be rewritten. Some concepts have not been discussed well while others need clarifications or the meaning is not clear. Page 1: 2. Abstract need rewording of sentences. It has to be rewritten. Abstract claim that Analytic, Euler Deconvolution and horizontal gradient, but these methods aren't new and are routinely used in modelling and interpretation of magnetic data. 3. Any reasons why the depth for Euler's solution is

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restricted to 5.3 km only. 4. The introduction section is small and incomplete. Many important references are missing or are not cited. The background study related to the problem addressed in the manuscript has not been adequately covered. 5. What is 2.75D modelling and why was it used in this work. What additional information can be known about the subsurface from this 2.75D modelling which otherwise can't be extracted from 2D and 3D or 2.5D models. 6. The geology section is fine. Page 3: 7. The quality of data used for the analysis needs to be checked. The aeromagnetic models were prepared in 1970 and therefore must have used IGRF models to remove the effect of main field from the data. How was it ensured that the aeromagnetic anomaly map did not contain short-wavelengths of the main field, which can easily mask the crustal field in the range of spherical harmonics degrees 11-14. 8. The aeromagnetic anomaly map is not shown in the manuscript and nor there is a discussion about it. The authors mention that the map was digitized, from a published map, but they do not discuss about the loss of information while digitizing and the resolution of the data. Page 5: 9. The modelling technique 2.75D has been discussed in brief only. The justification for the use of the technique also need to be provided. 10. How did Talwani and Heirtzler (1964) used for constructing the magnetic model. Need details about the model. Page 6: 11. The aeromagnetic data has not been discussed hence it is not clear whether the long wavelength anomalies seen in the RTE map are of crustal origin or from unfiltered main field model. Geological interpretation may perhaps be done with care. 12. The geological map needs to be overlaid in Figure 2. 13. What is the justification of reducing the aeromagnetic data to equator (RTE) and not to the pole (RTP). 14. Line 175-176: An anomaly that displays a trend may have a direction. However, the authors discuss the positive and negative poles and related it to the direction of anomalies. Needs clarification. 15. Line 179: Check the use of the word 'Perturbed' in the text. It is not clear. 16. Line 181-182: Explain a bipolar anomaly. Even surface anomalies can have near-surface origin why only deeper geological structures will display bipolar anomalies. Page 7: 17. Why the aeromagnetic data is upward continued before HGM method is applied? 18. Line 195: What are uniformed anomalies? Page 8: 19.

Line 206: Reference to the work on opening of Atlantic needs to be mentioned. 20. Line 220: Are there any geological or other geophysical evidence to suggest deeper magnetic structures. What kind of structures exists? Page 11 21. The map showing faults interpreted from Euler's solution – does it have any bearing or support from geological or seismic studies in the region. Need strong justification to this. Page 12 22. Again, the use and details of the 2.75D models are not discussed in the text. 23. The discussion section must be supported from results or inferences from other work also.

The grammar needs to be checked before the revised version is submitted here or elsewhere.

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