



Home > Journal > Earth & Environmental Sciences > IJG

[Indexing](#) [View Papers](#) [Aims & Scope](#) [Editorial Board](#) [Guideline](#) [Article Processing Charges](#)

IJG> Vol.3 No.2, May 2012

OPEN ACCESS

Polar 3D Transformation of the Full Gradient of Attractive Potential

PDF (Size:899KB) PP. 329-332 DOI: 10.4236/ijg.2012.32035

Author(s)

Gennady Prostopolupov, Michail Tarantin

ABSTRACT

The method of 3D polar transformation of full gravity potential gradient vectors is based on the geometric properties of the crossing points of complete gradient of the potential to localize the source region that causes the observed anomaly. The cross-points—poles—are defined for rectangular polygons of different sizes where the full gradient vector is defined at every vertex. The polygon size range could be specified. The set of poles, positive and negative, is then represented on the 3D chart in the form of clusters of dots or cubes and can be considered as a model image of the sources, intended for visual analysis and further interpretation.

KEYWORDS

Gravity; Anomaly; Interpretation; Model; Vector; Full Gradient; 3D Chart

Cite this paper

G. Prostopolupov and M. Tarantin, "Polar 3D Transformation of the Full Gradient of Attractive Potential," *International Journal of Geosciences*, Vol. 3 No. 2, 2012, pp. 329-332. doi: 10.4236/ijg.2012.32035.

References

- [1] C. Zhang, M. F. Mushayandebvu, A. B. Reid, J. D. Fairhead and M. E. Odegard, " Euler Deconvolution of Gravity Tensor Gradient Data," *Geophysics*, 2000, Vol. 65, No. 2, pp. 512-520. doi:10.1190/1.1444745
- [2] V. O. Mikhailov and M. Diament, " Some Aspects of Interpretation of Tensor Gradiometry Data," *Izvestiya, Physics of the Solid Earth*, Vol. 42, No. 12, 2006, pp. 971-978. doi:10.1134/S1069351306120019
- [3] A. S. Dolgal, " Geopotential Fields Approximation for Practical Tasks Using Equivalent Sources," *Geophysical Journal*, Vol. 21, No. 4, 1999, pp. 71-80.
- [4] A. D. Gvishiani, S. M. Agayan, Sh. R. Bogoutdinov and A. A. Solovyov, " Discrete Mathematical Analysis and Applications Geology and Geophysics," *Bulletin of Kamchatka Regional Association " Educational-Scientific Center" . Earth Sciences*, Vol. 16, No. 2, 2010, pp. 109-125
- [5] G. V. Prostopolupov and M. V. Tarantin, " Attractive Potential Full Gradient Vectors Transformation," *Proceedings of 38th Uspensky Symposium on Theoretical and Practical Aspects of Geological Interpretation of Geophysical Fields.*, Perm, 2011, pp. 245-248

- [Open Special Issues](#)
- [Published Special Issues](#)
- [Special Issues Guideline](#)

[IJG Subscription](#)

[Most popular papers in IJG](#)

[About IJG News](#)

[Frequently Asked Questions](#)

[Recommend to Peers](#)

[Recommend to Library](#)

[Contact Us](#)

Downloads: 158,502

Visits: 377,597

[Sponsors, Associates, and Links >>](#)