ABSTRACT

IDENTIFICATION OF GEOLOGICAL STRUCTURE WITH HORIZONTAL GRADIENT AND EULER DECONVOLUTION ANALYSIS BASED ON GRAVITY DATA

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A research has been done on the theme "the identification of geological structures with horizontal gradient analysis and euler deconvolution based on data Gravity". Gravity is a method that utilizes a variation of rock below the surface mass density. In the of geophysical study, gravity is used to indicate a geological fault with Horizontal Gradient analysis and estimate depth source of anomalous object with Euler Deconvolution analysis. This study aimed to analyze the fault with the analysis of horizontal gradient, calculate the depth of anomalous objects in the residual zone with Euler Deconvolution analysis and create a model of subsurface geological structure. Analysis horizontal gradient in the residual zone produce the fault which not correlated with Geologic fault but has relatively the same direction. Euler deconvolution analysis showed the depth of sediment with a range of 2.45 to 2.55 density values Sibonu area is in 400 m below the ground surface, while the Bomba area is in 300 m below the ground surface. Layers of sediment in this study area have an average thickness of 1 km.

Keywords: Gravity, Horizontal Gradient, Euler Deconvolution, Residual Zone