

Two Dimensional Modeling of Basaltic Rocks Intrusion Based on The Local Magnetic Anomalies Data in Jatilawang District Banyumas Regency

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Author Order	2 of 3
Accreditation	2
Abstract	<p>Two dimensional modeling to basaltic rocks intrusion in Pekuncen and Karanglewas Villages Jatilawang District, Banyumas Regency, Central Java based on the local magnetic anomalies data has been carried out in March to June 2020. The amount of magnetic data obtained from the acquisition in the field was 239 data stretching in position of 109.107222°E and 7.561361°S, with the local magnetic anomalies values ranging of -2,961.11 to 1,516.31 nT. To model anomalous sources in the subsurface in two dimensions, then the local magnetic anomalies data is transformed into pseudogravity anomalies data, so that anomalous value can be obtained as -27.815 to 41.087 mGal. Based on the pseudogravity anomalous map, the basaltic rock intrusion is interpreted to be located in the eastern part of the research area, so modeling of anomalous sources is conducted in this area. The results of 2D-modeling to local magnetic anomalies data indicate the presence of anomalous object interpreted as basaltic rock intrusion with magnetic susceptibility contrast value of 0.0223 cgs, located at depth of 52.61 to 505.97 m and a lateral length of 1777.94 m. This rock intrudes sediment rock from the Halang Formation and is connected to other basaltic rock near the surface with magnetic susceptibility contrast value of 0.0165 cgs, located at depth of 1.94 to 80.90 m and lateral length of 751.83 m. The results of lithological interpretation are in accordance with the geological information of the research area.</p>
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