

Magnetic anomaly due to magnetic halfspace with buried cylindrical perturbing body

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Abstract: For purposes of better knowledge of the magnetic anomalous fields in volcanic areas we analyze the mathematical model of relevant properties: wide spread magnetic halfspace of permeability μ_1 (corresponding to the lava field) which contains buried cylindrical body of radius a , permeability μ_2 . This problem is solved exactly by means of Laplace equations in bipolar co-ordinate system. Numerical results show that the presence of cylinder is reflected in the anomaly of ΔT , as well as in the inclination angle I .

Key words: magnetometric models, bipolar co-ordinates

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