World Academy of Science, Engineering and Technology
International Journal of Computer and Systems Engineering
Vol:9, No:04, 2015

The Solution of the Direct Problem of Electrical Prospecting with Direct Current Under Conditions of Ground Surface Relief

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Abstract : Theory of interpretation of electromagnetic fields studied in the electrical prospecting with direct current is mainly developed for the case of a horizontal surface observation. However in practice we often have to work in difficult terrain surface. Conducting interpretation without the influence of topography can cause non-existent anomalies on sections. This raises the problem of studying the impact of different shapes of ground surface relief on the results of electrical prospecting's research. This research examines the numerical solutions of the direct problem of electrical prospecting for two-dimensional and three-dimensional media, taking into account the terrain. The problem is solved using the method of integral equations. The density of secondary currents on the relief surface is obtained.

Keywords : ground surface relief, method of integral equations, numerical method, electromagnetic
Conference Title : ICCSAM 2015 : International Conference on Computer Science and Applied Mathematics
Conference Location : Venice, Italy
Conference Dates : April 13-14, 2015