عنوان مقاله:

Geostatistical-based geophysical model of electrical resistivity and chargeability data applied to image copper mineralization in the Ghalandar deposit, Iran

محل انتشار:

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خلاصه مقاله:

This research aims to construct 3D geophysical models of electrical resistivity and induced polarization by interpolating 2D inverted physical models through the geostatistical approach. The applicability of the method was examined for the Ghalandar porphyry-skarn copper deposit in the Agh-Daragh region, northwest of Iran. The 3D geophysical properties and block models of Cu grades were prepared by implementing the kriging interpolation method, whereby the recovered electrical models were closely linked to the Cu-sulfide mineralization. In order to evaluate the efficiency of the applied technique, the variogram models were validated using a cross-validation analysis of the kriging operation, proving the accuracy of data interpolation for each model. For the sake of meaningful correlation between geophysical models and Cu grades, the mineralization zones were extracted and subsequently propagated in the 3D space according to the generated physical properties. Meanwhile, the evaluation matrix was utilized to assess the performance of acquired results, where it confirmed that simultaneous consideration of physical models could much better determine the location of the copper mineralization. Also, the Swath plot was used as a second validation way to compare the anomalous zones.

کلمات کلیدی:

chargeability, Copper Mineralization, cross validation, Electrical resistivity, Kriging