

عنوان مقاله:

A Combination of Data Driven and Knowledge Driven of Outranking MCDM methods in Porphyry Cu prospectivity Mapping

محل انتشار:

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خلاصه مقاله:

Due to the diverse mineral resources in Iran, mineral exploration is critical to discovering new mineralization areas. Therefore, in this study, an efficient outranking method to integrate evidential layers and mineral potential/prospectivity mapping (MPM) in Chaharginbad, one of the potential areas for porphyry copper mineralization, has been studied. In recent years, a combination of knowledge-driven and data-driven methods has been successfully used in mineral exploration and MPM. In the context of exploration, geodatabase of geology, remote sensing, geochemical and geophysical data can be applied as essential data in the preparation of target mineralization evidential layers, and known mineral occurrences can be used as definitive data in the evaluation and validation of obtained results. In this study, we improve and evaluate the MOORA and TOPSIS MCDM methods for MPM and outranking mineralization areas to consider uncertainties of the evidential layers and the available data. For this purpose, the fractal method of concentration-area (C-A) and prediction-area (P-A) plots and normalized density as authentic methods are conducted for classifying, weighting, and integrating evidential layers and evaluation of final maps. MPM models obtained in this study of the target area to identify porphyry copper mineralization areas showed valid results so that the process and algorithms implemented in this study can be applied to the other type of mineralization, other regions, and further mineral exploration studies.

کلمات کلیدی:

,Chaharginbad, Evidential layers, MOORA, MPM, Outranking, Porphyry Cu

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