Geochemical Anomaly Identification based on Random Forest Algorithm



CHEN Zhen^{1,*}, CHEN Jianping¹ and AN Zhihong²

¹ School of Earth Sciences & Resources, China University of Geosciences 29 Xueyuan Road, Beijing 100083, China ² China Aero Geophysical Survey and Remote Sensing Center for Land and Resources, Beijing 100083, China

Citation: Chen et al., 2019. Geochemical Anomaly Identification based on Random Forest Algorithm. Acta Geologica Sinica (English Edition), 93 (supp.2): 391.

Abstract: The random forest algorithm is a nonlinear model that can map complex functional relations. It has been widely applied in many fields. This paper studies the application of random forest algorithm in geochemical anomaly identification. The random forest algorithm can be used to fit the complex relationship among various metallogenic elements and provide efficient decision-making tools for mineral prediction. This paper takes the geochemical data of the akille mining area in east WuZhuQi,the Inner Mongolia Autonomous Region,as the training sample and the test sample. The random forest algorithm is used to deal with the samples. The test shows that the convergence rate of the random forest method is faster and no over fitting phenomenon is produced, and the geochemical exploration can be made on the premise of superposition of the ore point map. The data are classified by anomaly and background, and the accuracy of the classification is up to 89%. This method also obtains the prediction model of geochemical elements combination in this area, which is practical and improves the precision of mineral prediction.



Fig. 1. The interpolation of random forest classification.

Key words: random forest, geochemical anomalies

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About the first author



CHEN Zhen, male, born in 1977 in Yiyang City, Hunan Province; School of Earth Sciences & Resources China University of Geosciences 29 Xueyuan Road, Beijing 100083, China. He is now majoring in Earth Exploration and Information Technology, is mainly engaged in the research and teaching of land remote sensing and remote sensing geology. E-mail: 1186549418@qq.com. phone:13521043658

^{*} Corresponding author. E-mail: 1186549418@qq.com