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Spatial analysis and visualization of exploration geochemical data

Renguang Zuo^{1*}, Emmanuel John M. Carranza^{2,3}, Jian Wang¹

¹State Key Laboratory of Geological Processes and Mineral Resources, China University of Geosciences, Wuhan 430074, China

²Economic Geology Research Centre (EGRU), James Cook University, Townsville, Queensland, Australia

³Institute of Geosciences, State University of Campinas (UniCamp), Campinas, São Paulo, Brazil

*Corresponding author. zrguang@cug.edu.cn (R. Zuo)

Abstract

This paper briefly reviews the application of geoinformatics in exploration geochemistry from the perspective of spatial analysis and visualization, and demonstrates the advantages of geoinformatics in exploring geochemical patterns and identifying geochemical anomalies. In particular, the application of geoinformatics to geochemical mapping, recognition of geochemical anomalies and simulation of geochemical patterns are discussed. The benefits of geoinformatics include: (1) overlay of geochemical data on a geological map, which helps geochemists to understand spatial geochemical patterns and visualize geochemical anomalies; (2) local neighbourhood spatial analysis, which considers the local spatial structure of geochemical patterns, as a powerful tool to identify weak geochemical anomalies; and (3) geochemical patterns simulation based on geological constrains, which helps to understand geological processes. Future researches should focus on development and application of

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