

The Spatial Distribution of Mineralization: Applications of Fry Analysis

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Abstract

The spatial distribution of mineralization is a foremost concern in regional exploration, research, and mine resource assessment. Here we use Fry analysis as a complement to structural geology and geostatistical methods. Fry analysis uses a geometrical method of spatial autocorrelation for point data. For n points there are n^2-n spatial relationships and, because of the square function, the method yields interpretable results with small as well as large data sets. Fry analysis is an alternative to variography for directional studies. At the regional scale, Fry analysis can assess distribution patterns of mineralization and potential controlling structures. At the deposit scale, the characteristics of zones of mineralization such as direction, spacing, high-grade ore direction, and grade distribution can all be deduced.