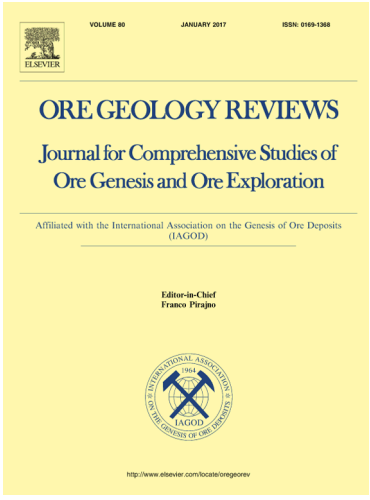

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Application and effects of singularity analysis in evaluating the denudation degree of Carlin-type gold deposits in southwest Guizhou, China

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Abstract

Denudation is a critical factor controlling the post-ore change and preservation of deposits, and the study of the degree of post-ore denudation is a common practice in mineral exploration. This paper introduces the use of singularity analysis and its efficacy in evaluating the degree of denudation of Carlin-type gold deposits in southwest Guizhou. The paper specifically focuses on investigating the geological effects before and after the introduction of the singularity analysis. Compared to the results obtained by means of the element concentration contrast, the results of the singularity analysis effectively estimate the relative degrees of denudation of the deposits and ore fields. In addition the results also accord well with findings from studies of the geology of ore deposits, the geochemical primary-halo and the apatite fission track. These outcomes suggest that using singularity analysis to determine the degree of denudation can yield significant geological information and support accurate interpretation of the data. Thus, the evaluation results based on such analysis have a higher reference value for expanding the understanding of post-ore deformation of deposits and exploring unexposed orebodies in southwest Guizhou.