



## **Quantifying the Spatial Distribution of Geological Point Processes**

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Geological point processes occur frequently in a wide variety of geoscience fields, including the study of mineral deposits, oil producing wells, earthquakes, and landslides. Characterization of the spatial distribution of geological point processes is important for understanding the properties of geological processes or events. Three examples of geological point processes respectively dealing with metallic mineral deposits, oil producing wells and Wenchuan aftershocks were studied. It is demonstrated that (1) the  $L(r)$ ,  $G(r)$ ,  $F(r)$  and  $J(r)$  functions are useful tools to assess whether or not a point pattern shows spatial clustering; (2) the clustering statistics of the underlying geological process are farctal; (3) a higher intensity point pattern generally has relatively large box dimension and low lacunarity; and (4) the features of geological point processes, such as metal grade, total amount or magnitude also have fractal properties.