



Patterns of singularity in Dalaimiao district, Inner Mongolia, China.

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The local singularity analysis (LSA) method is applied to Dalaimiao district, Inner Mongolia, China and some characteristics of singularity have been revealed and discussed. A sub-area of quaternary sediments, strata and intrusions are analysis with principle component analysis and scatter plots. The results show that different geo-object have clear and well-organized patterns in the space of singularity. Different lithologies shows a fixed order in the spaces of singularity for different element associations. Moreover, the differences among lithologies in the space of singularity are smaller than those in the space of concentrations. In addition, this pattern of singularity can be found in either whole map or a section. Therefore, it's reasonable to apply PCA on singularity maps to integrate geochemical information. So that, PCA is applied on both singularities of six pathfinder elements and their concentrations. The AUCs (Area under receiver operating characteristic curve) of PC1s of those two ways show that the former is superior to the later in indicating Mo deposits. This is important to how the LSA and PCA can be combined and applied to process geochemical data to assist mineral exploration.