

Interactive comment on “Application of unsupervised pattern recognition approaches for exploration of rare earth elements in Se-Chahun iron ore, central Iran” by Mohammadali Sarparandeh and Ardeshir Hezarkhani

Anonymous Referee #1

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The aim of this study is to investigate the geochemical distribution of REEs . for this purpose the paper introduces the use of efficient methods for data processing in the field of earth science, in particular for high-dimensional data such as geochemical data. So the main issue of this paper is application of unsupervised pattern recognition approaches in evaluating geochemical distribution of rare earth elements (REEs) in the Kiruna type magnetite– apatite deposit of Se-Chahun. However, the manuscript do not provide substantial new information of interest. I do believe that the manuscript needs

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additional theoretical development and explication of the data and analyses before it could be sent to publish. As written, the paper does not provide sufficient theoretical motivation and does not provide enough information about state of art about the four methods (modified basic sequential algorithmic scheme (MBSAS), hierarchical (agglomerative), k-means and SOM) applied in this field of study. Further, the data and analyses are not sufficiently justified.

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