

عنوان مقاله:

Outlining of High-quality Parts of Coal by Concentration–Volume Fractal Model in North Kochakali Coal Deposit, Central Iran

محل انتشار:

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خلاصه مقاله:

The aim is to use the Concentration-Volume (C-V) fractal model to identify high-quality parts of coal seams based on sulfur and ash concentrations. In the K₁ and KY coal seams in the North Kochakali coal deposit, 5 and 6 different populations of ash and sulfur content were obtained based on the results. According to this model, sulfur and ash concentrations below ۱.۸۱% and ۳۳.۱% for the KY seam, and below ۴.۴۶% and ۳۷.۱% for the K₁ seam, respective base on Russian standard for ash and high sulfur content of North Kochakali coals were considered as appropriate values. In order to identify the high-quality parts of K₁ and KY coal seams, plans at different depths were used based on the C-V fractal model. Plans at different depths suggests that the southern part of the K₁ seam and the northern part of the KY seam have the highest-quality based on sulfur and ash concentrations, which should be considered in the extraction operation. The logratio matrix was used to compare the results of the C-V fractal model with the geological data of pyrite veins and coal ash. This matrix indicates that sulfur content above ۳.۸% for the KY seam and above ۴.۴۱% for the K₁ seam have good and very good correlation with pyritic veins of geological data, respectively. There are good overall accuracy (OA) values in the correlation between parts of the seam with ash concentration above ۳۷.۱% and ۴۵.۷% for the K₁ and KY seams, respectively, and the coal ash obtained from the geological data

کلمات کلیدی:

Concentration-Volume (C-V) fractal model, Coal, North Kochakali, Logratio matrix, Central Iran

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