

GEOESTATISTICAL MODEL OF THE SAIVÁ MINE - RIO BRANCO SUL (PR)

FIGUEIRA, E. G. , ROSTIROLLA, S. P. Universidade Federal do Paraná, Curitiba, Brazil

Geoestatistical techniques are applied and discusses in the study of limestone ore of the Saivá mine. The main lithologies are metalimestones, metadolomites, metamarbles and phyllites, representative of a platformal sequence of low-grade greenschist facies metamorphism. The data used for the geoestatistical analysis are from an exploration project carried out in 70 S, whose drill cores were analyzed chemically for several oxides, including: Si, Al, Fe, Ca, Mg and K. 2D and 3D exploratory variography shows that, because of a strong heterogeneity in the sampling, only the directional variograms along the drill holes evidence a well behaved spatial covariance. The modeled variograms suggest that there are two types of spatial variability. The estimate was done by ordinary kriging, for blocks of several sizes, with the objective of verifying the differences of the averages of the estimated values, as well as the operational and visual advantages of each model. Results in the 3D kriging evidence two controls in the grade variation: 1) in a larger scale, probably a lithologic-sedimentary one, which controlled the individualization of NE belts, with high and low MgO, respectively, in which SiO presents a more constant distribution; 2) in a smaller scale, probably a metamorphic-lithologic control, associated with repetitive small trends or cycles around 30 to 40 meters, striking N30-40E and dip to NW; such variation of grades is seen both Mg and Si, but mainly in Si, because of its larger mobility during metamorphism.