METADATA

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Abstract

This book is adressed to undergraduate students of Polytechnic and Geological Schools who are studying Mining Research, as well as teachers and professionals in the mining field who wish to deepen their knowledge of specific technical issues in the subject. The book covers topics such as the discovery of deposits, the calculation of the quality and quantity of reserves, and the collection of data for calculating their value, i.e., the economic benefit that will result from their exploitation. First of all, the analysis of mining exploration as an investment process with a high degree of business risk is documented, and dynamic planning is developed as a methodology for optimizing the process followed. Next, the basic types of deposits, the various systems for classifying reserves by category, and the determination of their industrial value are described. This is followed by a description of the geochemical and geophysical methods used in the initial stages of exploration, as well as the direct methods involving the direct sampling of mineral-bearing sections, either through drilling or mining. The issues of the performance of a research grid and the determination of the optimal density of research projects are analyzed. A review of reserve estimation methods is provided, and geostatistics is presented in detail as the most widely used method. Finally, reference is made to the data required for the preparation of the necessary studies, such as the technical-economic study, the feasibility study, and the environmental impact study, in order to evaluate and implement the investment plan.

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