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Models For Optimal Investment And Production Plans In The Mining Industry*

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Abstract

This paper intends to present different models for the decision-making process in mining enterprises. Hence, the paper first introduces the general model dedicated to solving different problems raised by determining the optimal investment planning in the mining industry. The developed model can also be written in a matrix form, obtaining what is called the general matrix model of a mining enterprise. As such, the next paragraph explores the possibilities of building a matrix model for a metal-ore mining enterprise (in the first part) that may enable to determine its optimum production level under certain constraints (in the second part). The remaining of the paper is dedicated to introducing a case study regarding the substantiation of production plans through mathematical programming in the case of coal deposits.

Keywords: mining industry, model, matrix model restrictions, mining fundamental economic principle, optimum exploration programs, linear programming.

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