

## NEW APPROACH TO THE DESIGN OF MINING OPERATIONS

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**Purpose** is to develop a new approach to the design of mining operations basing upon models and methods of decision making.

**Methodology.** The paper has applied a complex approach involving approaches of decision-making theory. Analysis of the production development scenarios is proposed for strategic activity planning; criteria to make decisions under the uncertainty conditions as well as decision-making trees for day-to-day management are proposed to determine balanced production level.

**Findings.** It has been identified that mining production design is of the determined character demonstrating changes in “state of the nature” depending upon the made decisions. The idea of mining production is to reduce uncertainty gradually by means of analysis of production scenarios, and elimination of unfavourable alternatives. Operative management is implemented while constructing decision trees, and optimizing operation parameters. Representation of sets of rational equipment types as well as development scenarios, and their comparison in terms of decision-making parameters makes it possible to determine adequate capacity of a working area, and to reduce expenditures connected with the equipment purchase and maintenance. In this context, limiting factors, effecting anticipatory mining output, are taken into consideration.

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