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A new model for automated pushback selection. (English) Zbl 1458.90170

Summary: The design of pushbacks is essential to long-term open pit mine scheduling because it partitions the pit space into individual units, controlling ore and waste production. In this paper, a new model is proposed for the pushback selection procedure, which consists of characterizing the potential pushbacks based on the comprehensive family of nested pits and selecting those ones that meet a set of criteria, for instance, bounded ore and waste. An advantage of this method is the possibility to automate the pushback selection methodology, applying well-defined criteria for the selection and reducing the time employed in the planning task.

MSC:
90B10 Deterministic network models in operations research
90C11 Mixed integer programming
90C35 Programming involving graphs or networks

Keywords:
long-term open-pit mine planning; nested pits; pushback selection; mixed integer programming

Software:
MineLib; Python; PuLP; Gurobi

Full Text: DOI

References:
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