

# Solving Open-Pit Long-Term Production Planning problems with constraint programming a performance evaluation

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Open pit mining problems aims at correctly identifying the set of blocks to be mined in order to maximize the net present value of the extracted ore. Different constraints can be involved and may vary the difficulty of the problem. In particular, the Open-Pit Long-Term Production Planning Problem is one of the variants that better models the real mining operation. It considers, among others, limited processing plant and mining capacity as well as slope and grade blending constraints. During the last thirty years, different techniques have been proposed to solve the multiple variants of the open pit mining problem; however, the resolution via constraint programming has not been reported yet. In this paper, we present a performance evaluation of seven constraint programming solvers for the open pit mining long-term scheduling problem. We illustrate interesting and comparative results on a set of varied open pit mining instances.

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