

Cut-Off Optimization using Multidimensional Variables

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ABSTRACT

Traditional Long Term Planning methods uses materials aggregations according to value ranges of a particular attribute to build bins, to take the extract or process decision depending of the case. This approach is correct when a single attribute is taken as key driver of the optimization, however when more attributes must be taken into account, the obtained solution could be distant of the optimum.

An opportunity exists to get better results to improving the extraction selectivity building bins that consider other key drivers in the optimization process, in order to maximize the extraction value and changing the phase definition, sequence and cut off grade policies.

In the proposed work, an implementation of the above is presented for the particular case of a copper open pit mining operation, where blending constraints are applied for different geological alterations. The change in the phase size and shapes, sequence and the value added to the extraction is shown under this new approach of cut off grades with multidimensional bins.