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Plenary Speaker

Branch-and-Price Guided Search

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Abstract

We present an exact solution approach for integer programs in which well-chosen restrictions are solved to produce high-quality solutions early in the search. Column generation is used for generating the restrictions and for producing bounds on the value of an optimal solution. A local search scheme is embedded to explore neighbours of the current best solution. The approach is designed to be implemented on a multi-processor architecture. The efficacy of the approach is demonstrated on the integer multi-commodity fixed-charge network flow problem and a complex maritime inventory routing problem with varying storage capacities and production/consumption rates at facilities.