

# Finding Optimal Solutions to the Graph-partitioning problem with Heuristic Search

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## **Abstract**

When performing heuristic search, usually, a more accurate heuristic function speeds the search. A general idea for finding better heuristic functions is that looking into interactions between subgoals of the problem and adding them to an existing heuristic function resolves with a more accurate heuristic function. We have applied this idea to a number of domains and in this paper we demonstrate this idea on the graph partitioning problem. We introduce a sequence of admissible heuristic functions, each one is more complicated and looks more deeply into interactions between vertices of the graph. We obtained a speedup of up to a couple of orders of magnitude.