Reducing blocking effects in multi-block layouts

Felix Werth[1], Oliver Ullrich[1], Ewald Speckenmeyer[1]

[1]Universität zu Köln, Pohligstr. 1, 50969 Köln

Tour planning in multi-block layouts is a common exercise in logistics. In those systems, blocking effects result from conflicting agents competing for resources. Although clearly exceptional in real world applications, most methods of tour planning assume only one active agent, and thus do not consider blocking effects.

In this paper we examine heuristic methods of tour planning in multi-block layouts with multiple agents, finding that blocking effects have a significant impact on system performance. We show that methods devised for the mentioned special case do not scale very well when applied to scenarios with multiple agents. We propose a heuristic method which is capable of reducing blocking effects. It generates tours of equal or shorter length than those produced by the other examined methods.