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MADALGO seminars by Andrej Brodnik, University of Primorska

Vehicle and Crew Scheduling in public transport

Abstract:
We will we present a method for the vehicle and crew scheduling problem (CSP) in public transport that is based on the ACO meta-heuristic. We show that the CSP does not satisfy a fundamental assumption of the meta-heuristic and that the classic Ant System does not work. We accurately implemented Huisman's model for the MDVSP (multi-depot vehicle scheduling problem) and CSP with changeovers and solved his random instances. The quality of solution deviates from those of the IP approach for at most 7 percent and was computed in a few seconds. The acceptability of the solution qualities is shown on the real-world data from the public urban bus transit in Ljubljana, Slovenia.

Joint work with David Paš