

Berger, J.; Barkaoui, M.

A new hybrid genetic algorithm for the capacitated vehicle routing problem. (English)

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Summary: Recently proved successful for variants of the vehicle routing problem (VRP) involving time windows, genetic algorithms have not yet shown to compete or challenge current best search techniques in solving the classical capacitated VRP. A new hybrid genetic algorithm to address the capacitated VRP is proposed. The basic scheme consists in concurrently evolving two populations of solutions to minimize total travelled distance using genetic operators combining variations of key concepts inspired from routing techniques and search strategies used for a time variant of the problem to further provide search guidance while balancing intensification and diversification. Results from a computational experiment over common benchmark problems report the proposed approach to be very competitive with the best-known methods.

MSC:

[90B06](#) Transportation, logistics and supply chain management

[90B10](#) Deterministic network models in operations research

[90C59](#) Approximation methods and heuristics in mathematical programming

Cited in **8** Documents

Keywords:

vehicle routing problems; heuristics

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