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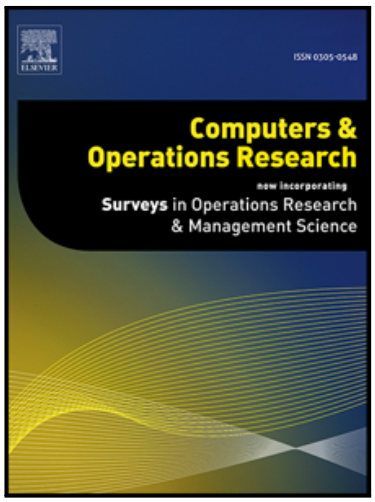

The Driver and Vehicle Routing Problem

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PII: S0305-0548(17)30309-X
DOI: 10.1016/j.cor.2017.12.010
Reference: CAOR 4374

To appear in: *Computers and Operations Research*

Received date: 26 July 2017
Revised date: 30 October 2017
Accepted date: 10 December 2017

Please cite this article as: Bencomo Domínguez-Martín, Inmaculada Rodríguez-Martín, Juan-José Salazar-González, The Driver and Vehicle Routing Problem, *Computers and Operations Research* (2017), doi: 10.1016/j.cor.2017.12.010

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Highlights

- We introduce the Driver and Vehicle Routing Problem (DVRP), a new two-depot vehicle routing problem where synchronized routes have to be determined for vehicles and drivers in order to give service to a set of customers.
- Vehicles and drivers routes have different characteristics that make it mandatory that drivers exchange vehicles. Therefore, vehicles are not lead by the same drivers along their entire routes.
- We propose a mixed integer linear programming formulation to model the problem, and present several families of valid inequalities to strengthen its linear relaxation.
- We describe a branch-and-cut algorithm for solving the problem that is able to cope with instances with up to 30 nodes and different features.

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