



A parallel matheuristic for the technician routing problem with electric and conventional vehicles

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Résumé en anglais	<p>The technician routing problem with conventional and electric vehicles (TRP-CEV) consists in designing service routes taking into account the customers' time windows and the technicians' skills, shifts, and lunch breaks. In the TRP-CEV routes are covered using a fixed and heterogeneous fleet of conventional and electric vehicles (EVs). Due to their relatively limited driving ranges, EVs may need to include in their routes one or more recharging stops. In this talk we present a parallel matheuristic for the TRP-CEV. The approach works in two phases. In the first phase it decomposes the problem into a number of "easier to solve" vehicle routing problems with time windows and solves these problems in parallel using a GRASP. During the execution of this phase, the routes making up the local optima are stored in a long-term memory. In the second phase, the approach uses the routes stored in the long-term memory to assemble a solution to the TRP-CEV. We discuss computational experiments carried on real-world TRP-CEV instances provided by a French public utility and instances for the closely-related electric fleet size and mix vehicle routing problem with time windows and recharging stations taken from the literature.</p>
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