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# TSP with one truck and one or multiple drones

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## Abstract

We develop a novel mixed-integer programming (MIP) formulation for a traveling salesman problem with a truck-drone tandem that carries out a set of deliveries. Our model takes an approach different to other MIP formulations in the literature. Benchmarks show that it can compete with those as well as with purpose-built exact solution methods but has the advantage of being easily implementable with an off-the-shelf solver. Our model can be easily extended to include multiple drones, with only a minor impact on solution performance.

**Keywords:** drones, drone delivery, last mile, tsp

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