

# Optimizing a Maritime Split Pickup and Split Delivery Problem

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## **Abstract**

We discuss alternative formulations of the multi commodity split pickup and split delivery problem without predefined pairing of locations. Pickup and delivery quantities in each location can be less or greater than vehicle capacity. All quantities can be split between a non-specified number of vehicles. Some commodities have only one pickup or delivery location, while other commodities can have several locations both for pickup and delivery. Only commodities with only one pickup point and one delivery location are paired. We assume that we have available a heterogeneous fleet of vehicles (with emphasis on ships). Each vehicle can carry several commodities simultaneously. We plan to report computational results for small test cases solved by different approaches.