The seaside operations planning problems in port terminals: Formulation and optimization

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Abstract. Located on the southern shore of the Mediterranean and in northern Africa, Tunisia enjoys a strategic geographical position that makes the country a junction point between the Arab world, Africa and Europe. Thus, the importance of maritime transport is emphasized with more than eight ports along the Tunisian coasts. In this workshop we will present the importance of maritime trade over the world and especially in Tunisia. First, we highlight the importance of the optimization field in the maritime sector by studying two of the most crucial problems in maritime logistics and transportation namely the berth allocation problem (BAP) and the quay crane assignment problem (QCAP). Second we will talk about the optimization methods we used to solve these problems. We conclude by a real case study, results, and analysis from computational experiments on a set of real instances from a Tunisian port.

Keywords: Maritime transportation, Berth allocation, Quay crane assignment, optimization

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