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A New Mathematical Programming Formulation for the Single-Picker Routing Problem.

This page contains material of the following publication:

Abstract: The Single-Picker Routing Problem deals with the determination of the sequence according to which article locations have to be visited in a distribution warehouse and the identication of the corresponding paths which have to be travelled by human operators (order pickers) in order to collect a set of items requested by internal or external customers. The Single-Picker Routing Problem (SPRP) represents a special case of the classic Traveling Salesman Problem (TSP) and, therefore, can also be modeled as a TSP. Standard TSP formulations applied to the SPRP, however, neglect that in distribution warehouses article locations are arranged in a specially structured way. When arranged according to a block layout, articles are located in parallel picking aisles and order pickers can only change over to another picking aisle at certain positions by means of so-called cross aisles. In this paper, for the first time a mathematical programming formulation is proposed which takes into account this specic property. By means of extensive numerical experiments it is shown that the proposed formulation is superior to standard TSP formulations.

Typ	› Titel	Content
	› Instances SPRP	This file contains all data files for the Picker Routing Problem.

Materials