

# VORTRAG

## **Optimization of empty container repositioning in intermodal transport**

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### Abstract:

First an overview of ongoing research at the research group Logistics of Hasselt University (Belgium) is presented. Next, the main part of the talk focusses on the optimization of empty container repositioning movements in intermodal container transport networks in the hinterland of major seaports. In such networks, inbound loaded containers are transported from the seaport to a container terminal in the hinterland by a sustainable mode of transport like barge or rail. The final distribution of containers from these terminals to their consignees is performed by truck. Outbound loaded containers are transported the other way around, from shippers in the hinterland to the seaport. Due to imbalances in container flows on an individual customer level, empty containers have to be repositioned between consignees, shippers, intermodal container terminals and the seaport. Two aspects of the repositioning problem are discussed: 1) a tactical decision making problem related to service network design in barge transportation, 2) a vehicle routing problem which optimizes loaded and empty container movements by trucks between container terminals and customers. For both problems, opportunities to save operating costs by integrating loaded and empty container movements are analyzed. The first problem is modeled as a MIP-model and is solved using a commercial solver, while a meta-heuristic approach is presented for the second problem. Finally, past and ongoing research on other problems might be discussed (dial-a-ride problems, location decisions for doctors on call).