
Models for freight transportation

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Résumé

The ability to move goods safely, quickly and cost-efficiently to markets is important for international trade, national distributive trades, and economic development. The presentation will discuss the door-to-door freight transportation problem in its entirety: consolidation phase, transportation between the platforms, and distribution phase. In a general way, the problem is described as a set of orders that have a release and delivery date and must be consolidated and routed from a source to a destination point.

From a simple initial mathematical model, several models are presented, each integrating a different aspect of the problem such as long-haul transportation, freight consolidation, freight storage and intermodal transport. Models are formulated as integer programming problems and some results of small practical instances are shown along with some considerations. Finally, future orientations are presented, specially the multiobjective aspect of the problem considering, for instance, not only economical cost optimization but environmental objectives as well.

Mots-Clés: freight transportation, integer programming, multimodal transportation

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