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A memetic algorithm for the hub location-routing problem

Nathalie Bostel¹, Mi Zhang², Pierre Dejax³

¹LUNAM, IRCCyN & Université de Nantes, 58 rue Michel Ange, B.P. 420, 44606 Saint-Nazaire, France
nathalie.bostel@univ-nantes.fr

²LUNAM, IRCCyN & Ecole Centrale de Nantes, 1 rue de la Noë, B.P. 92101, 44321 Nantes, France
mi.zhang@ec-nantes.fr

³LUNAM, IRCCyN & Ecole des Mines de Nantes, 4 rue Alfred Kastler, B.P. 20722, 44307 Nantes, France
pierre.dejax@mines-nantes.fr

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In many logistic systems for less than truckload (LTL) shipments, transportation of goods is made through collection/delivery tours to/from a hub. The design of such a logistic network corresponds to the Hub Location Routing Problem (HLRP). HLRP consists in locating hub facilities concentrating flows in order to take advantage of economies of scale and through which flows are to be routed from origins to destinations, and considers also both collection and distribution routes. We present a generic MIP formulation of this problem and a solution method based on a genetic algorithm improved by some local searches. Computational experiments are presented.