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A memetic algorithm for the hub location-routing problem

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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.