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An Exact Algorithm for the Modular Hub Location Problem with Single Assignments

ABSTRACT/RÉSUMÉ : A key feature of hub-and-spoke networks is the consolidation of flows at hub facilities. This bundling of flows leads to reduced transportation costs, which are frequently modeled with a constant discount factor that is applied to all costs associated with the flows that are routed between pairs of hubs. It has been shown that the assumption of flow-independent costs can be an oversimplification in several applications, and may not only miscalculate the total transportation cost but may also erroneously select the optimal set of hubs and the allocation pattern of nodes to hubs. In this talk we present the Modular Hub Location Problem that explicitly models the flow dependency of the transportation cost on all arcs of the hub network. We present a branch-and-bound algorithm, which uses a Lagrangean relaxation algorithm to obtain lower bounds at every node of the enumeration tree. Computational results are reported.

BIOGRAPHY: Moayad Tanash is a Ph.D. candidate at Concordia University under the supervision of Ivan Contreras and Navneet Vidyarthi. His research interests include Hub and Facility Location and exact solution algorithms for large scale optimization problems. He is a also member of MORSC & CIRRELT.

Lundi/Monday

14 Novembre 2016, 11:00h-12:00h

November 14th, 2016, 11:00am-
12:00pm

Salle / Room EV1.162

Pavillon EV Université Concordia/
EV Building Concordia University

Café et collations seront servis/
Coffee and snacks will be provided

Inscription obligatoire au plus tard le 11 Novembre / Registration required no later than November 11th
<http://doodle.com/poll/ranxhi5gy8t2imvm>