



Séminaire / Seminar

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Models for Optimal Survivable Routing with a Minimum Number of Hops: Comparing Disaggregated with Aggregated Models

Résumé/Abstract

Given an undirected network with link capacities and a set of commodities with known demands, this paper addresses the problem of determining D (with $D = 2, 3, 4$) hop-constrained node disjoint paths for each commodity while minimizing the average or the maximum number of hops. These paths are defined according to two survivability mechanisms – Path Diversity and Path Protection, the latter guaranteeing total demand protection in the event of n failures (with $n < D$). We study these problems in the context of a traffic engineering task over pre-dimensioned networks where the real traffic demands are inevitably different from the estimated traffic demands that were assumed in the network dimensioning task. We present two classes of ILP models, disaggregated and aggregated, for both problems, study the relationship between their linear programming relaxations and compare their effectiveness through a set of computational experiments. The results show that, in practice, there is no gain in using the disaggregated models.

Note

Luis Gouveia est/is professeur agrégé/Associate Professor au/at the Department of Statistics and Operations Research, Faculty of Sciences, University of Lisboa, Portugal. legouveia@fc.ul.pt

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Salle / Room 5441

Pavillon André-Aisenstadt

Université de Montréal

Bienvenue à tous / Welcome to all

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