



STOCHASTIC ROUTING AND WAVELENGTH ASSIGNMENT PROBLEM IN WDM NETWORKS

Abstract:

In a telecommunication network, Routing and Wavelength Assignment (RWA) is the problem of finding a path and a wavelength for every incoming request. In the first part of this talk we introduce the first two-stage stochastic integer programming model for the RWA problem with incoming request uncertainty, to maximize the expected number of granted requests. We design a decomposition-based solution approach, which uses various relaxations of the problem and a newly developed cut family. Guided by the multistage nature of the provisioning decisions, in the second part of the talk we present a multistage model for the RWA problem with incremental traffic. We derive primal and dual policies by drawing on our recently proposed bounding techniques employing Lagrangian dual decision rules. Evaluating obtained solutions in a multistage setting in a rolling-horizon framework, we show that our methods provide high-quality solutions compared to traditionally used deterministic ones.

Zoom Link:

<https://umontreal.zoom.us/j/85173261958?pwd=UIRQUkwrbG5rZkMvTmxLaDN0NlRudz09>

MARDI / TUESDAY

25 Mai 2021, 13h00 – 14h00

Directeur/Advisor:

Dr. Merve Bodur

Responsables / Organizers

Peyman Kafaei