CIRRELT

SÉMINAIRE CONJOINT / JOINT SEMINAR

ELDON GUNN

Dalhousie University, Halifax, Nouvelle-Écosse/Nova Scotia

MITACS

« INTEGER PROGRAMMING METHODS FOR MEDIUM TERM FOREST HARVESTING AND ROAD BUILDING »

Résumé / Abstract

We consider problems of forest harvesting where the time frame is short enough that regeneration and re-growth of a harvested stand is not an issue. Within this framework, we want to ensure that harvest openings are kept below some desired maximum. This is usually referred to as the adjacency problem. We consider multi- period greenup problems where a harvested stand can be considered in non-forested state for more than one time period. Since stands can only be harvested if there is road access to that stand, road building costs are significant. The talk discusses various appropriate objective functions and constraints on harvest flow for these problems. One important issue is the tradeoff between road building costs and the future condition of the unharvested forest. Our original approach involved the use of tabu search methods to solve these types of problems. Later we developed a simple way of characterizing the adjacency constraints that made possible integer programming approaches for the problem. Our formulations of the adjacency constraints are inexact but good enough for most practical purposes. The use of this formulation has permitted the solution of harvesting and road building problems involving several thousand stands.

Joint work with Evelyn Richards, Department of Forest Engineering, University of New Brunswick, Fredericton, NB

Note : Professeur/Professor, Department of Industrial Engineering, Dalhousie University
Eldon.Gunn@dal.ca et/and http://industrialengineering.dal.ca/Faculty%20and%20Staff/Eldon_Gunn.php

MERCREDI / WEDNESDAY

17 Février 2010 / February 17, 2010

10h30

Salle / Room 5441
Pavillon André-Aisenstadt
Université de Montréal

Bienvenue à tous / Welcome to all

Responsable/Organizer : Bernard Gendron

Information : Pierre Marchand
Responsable des communications du CIRRELT
pierre.marchand@cirrelt.ulaval.ca

UNIVERSITÉ LAVAL · UQÀM · HEC MONTRÉAL · ÉCOLE POLYTECHNIQUE MONTRÉAL · Université de Montréal