



Abstract

"Inventory Routing Problems"

Miércoles 14 de marzo, entre 12:00 y 13:30 horas

Sala 31 Departamento Ingeniería Industrial (Domeyko 2338, Santiago)

Abstract: The class of Inventory-Routing Problems (IRPs) includes a variety of different optimization problems that, though often very different from each other, all consider a routing and an inventory component of an optimization problem. IRPs have received little attention, if compared to vehicle routing problems. However, as they are highly relevant in supply chain management, they are attracting an increasing number of contributions. In this seminar the class of inventory routing problems will be presented. After a review of the literature, with motivations to study this class of problems, the talk will focus on a class of discrete time IRPs that include in the objective function transportation and inventory costs. Contributions in this area will be reviewed together with their relevance in Vendor-Managed Inventory systems.

"Optimization Problems in Transportation"

Jueves 15 de marzo, entre 10:15 y 11:45 horas

Sala 23 Departamento Ingeniería Industrial (Domeyko 2338, Santiago)

Abstract: In this talk I will present and discuss different vehicle routing problems (VRP). Starting from motivating applications, I will present some VRP problems, discuss their characteristics, their solution and the savings that can be achieved. The motivating applications include waste collection, fleet management, transportation/inventory trade-offs.

Bío: Grazia Speranza es profesora titular del Departamento de Métodos Cuantitativos de la Università degli Studi di Brescia, Italia. Entre sus líneas de investigación destacan la optimización en logística; programación entera mixta y soluciones algorítmicas para minimizar costos de transporte e inventario; modelos y algoritmos para el ruteo de vehículos; análisis de competitividad para problemas algorítmicos de programación en línea y optimización financiera. Es co-editora del libro *Innovations in Distribution Logistics* y, desde 2011 es editor de *EURO Journal on Transportation and Logistics* y el *International Journal of Portfolio Optimization*.

"A Polyhedral Approach to Lot-Sizing Problems: 30 years on"

Viernes 16 de marzo, entre 12:00 y 13:30 horas

Sala 22 Departamento Ingeniería Industrial (Domeyko 2338, Santiago)

We present a personal view of how the subject has evolved over the last 30 years, leading to:

- i) a variety of results about elementary mixed integer programs, such as mixing sets and network dual mixed integer programs,
- ii) extended formulations (and cutting plane algorithms) for a wide range of single-item lot-sizing variants that have been very effective computationally,
- iii) further applications to multi-item lot-sizing, the discrete newsvendor problem, inventory routing (shipping) and chance-constrained programming, and
- iv) challenging questions concerning the use of large extended formulations.

Bío: Laurence Wolsey es profesor en el Center for Operations Research and Econometrics, CORE de la Université Catholique de Louvain, Bélgica. Su principal campo de investigación es la programación entera mixta, en la que ha hecho aportes fundamentales tanto en la teoría como en la práctica computacional. Es co-autor de reconocidos libros de enseñanza como *Integer Programming and Combinatorial Optimization* y *50 Years of Integer Programming 1958-2008: From the Early Years to the State-of-the-Art*. Fue editor de *Mathematical Programming* y ha colaborado en empresas como BASF, France Telecom y DASH. Entre los premios que ha recibido destacan el Orchard-Hays, en 1988 de la Mathematical Programming Society (con TJ Van Roy); el Lanchester Prize, en 1989 de la Operations Research Society of America (con G.L. Nemhauser), y la EURO Gold Medal en 1994.