

COLUMN GENERATION 2016

May 22-25, 2016, Búzios, Brazil

Sunday, May 22

19:30 Welcome reception

Monday, May 23

8:40 Opening session

Session 1

8:45 **Selective pricing in branch-and-price algorithms for vehicle routing**

Guy Desaulniers, Diego Pecin, Claudio Contardo

9:10 **Limited-memory subset-row cuts for VRP**

Diego Pecin, Claudio Contardo, Guy Desaulniers, Artur Pessoa, Marcus Poggi, Eduardo Uchoa

9:35 **The pickup and delivery problem with scheduling at the dock**

Vitor Andrade Almeida de Souza, Geraldo Robson Mateus

10:00 **P-step formulations for vehicle routing problems: a generalized class of models based on column generation**

Pedro Munari

10:25 Coffee break

Session 2

10:55 **Column Generation for Airline Crew Planning and Scheduling -- implementation and research directions for solving industrial problems**

Daniel Villeneuve, Norbert Lingaya

11:20 **Column generation with dynamic constraint aggregation in the master problem**

François Soumis, Issmail El Hallaoui, Hocine Bouarab, François Lessard

11:45 **Column Generation with the Primal-Dual Interior Point Method**

Jacek Gondzio

12:10 **On the solution of some highly degenerate, very large-scale combinatorial optimization problems: Applications to clustering**

Daniel Aloise, Claudio Contardo

12:35 Lunch

Session 3

- 14:00** **A Column Generation approach to VMAT treatment planning in radiation therapy**
Mehdi Mahnam, Michel Gendreau, Nadia Lahrichi, **Louis-Martin Rousseau**
- 14:25** **A Branch and Price Approach for Deployment of Cloud Services**
Anders N. Gullhav, Bjørn Nygreen
- 14:50** **Social Network Analysis and Community Detection by Decomposing a Graph into Relaxed Cliques**
Timo Gschwind, Stefan Irnich, Fabio Furini, Roberto Wolfler Calvo
- 15:15** **Column Generation for the Nurse Rostering Problem: Improved Lower and Upper Bounds**
Rafael A.M. Gomes, **Haroldo G. Santos**, Túlio A.M. Toffolo
- 15:40** **Coffee break**

Session 4

- 16:10** **A decomposition approach for correlated random vector generation**
Andrés L. Medaglia, Jorge Sefair, Oscar Guaje
- 16:35** **Application of Dantzig-Wolfe Reformulation to Binary Quadratic Problems**
Alberto Ceselli, Lucas Létocart, **Emiliano Traversi**
- 17:00** **An Improved Branch-Cut-and-Price algorithm for Parallel Machine Scheduling Problems**
Daniel Oliveira, Artur Pessoa
- 17:25** **Large-scale optimization of the Unit Commitment Problem for medium-term simulations of Energy Systems**
Alberto Ceselli, Giovanni Righini, Dario Siface, **Andrea Taverna**

Tuesday, May 24

Session 5

- 8:45** **The tail assignment problem with look-ahead maintenance constraints**
Stephen J. Maher, Guy Desaulniers, François Soumis
- 9:10** **Solving bin packing problems with fragmentation**
Alberto Ceselli, Marco Casazza
- 9:35** **Pseudo-polynomial Formulations for Cutting Stock Problems**
Maxence Delorme, **Manuel Iori**
- 10:00** **Column generation for vector packing with bounds from multidimensional dual-feasible functions**
Cláudio Alves, **José Valério de Carvalho**, François Clautiaux, Jürgen Rietz
- 10:25** **Coffee break**

Session 6

- 10:55** **Recent results for column generation based diving heuristics**
Ruslan Sadykov, François Vanderbeck, Artur Pessoa, Issam Tahiri, Eduardo Uchoa
- 11:20** **Integral column generation for set partitioning problems**
Issmail El Hallaoui, Adil Tahir, Guy Desaulniers
- 11:45** **Pricing in column generation**
Jacques Desrosiers
- 12:10** **Lunch**
- 14:00 - 18:00** **Excursion**
- 19:00 - 22:00** **Workshop dinner**

Wednesday, May 25

Session 7

- 8:45** **A comparison of formulations and relaxations for the cross-dock door assignment problem**
Wael Nassief, Brigitte Jaumard
- 9:10** **A branch-and-cut-and-price algorithm for the P-Arborescence Star Problem**
Vinicius Morais, Geraldo Robson Mateus
- 9:35** **Cycle decomposition on network flow problems**
Jean-Bertrand Gauthier, Jacques Desrosiers
- 10:00** **Dantzig-Wolfe Reformulations for the Stable Set Problem and Possible Extensions to Related Problems**
Jonas Witt, Marco Lübbecke
- 10:25** **Coffee break**

Session 8

- 10:55** **An approach based on Column Generation for solving routing problems with fractional objective function**
Roberto Wolfler Calvo, Roberto Baldacci, Emiliano Traversi, Lucas Letocart
- 11:20** **Branch-and-cut (and price) for the chance constrained vehicle routing problem**
Thai Dinh, Ricardo Fukasawa, James Luedtke
- 11:45** **Improved Lower Bounds using Im-SRCs for the Capacitated Arc Routing Problem**
Rafael Martinelli, Marcelo Malta and Marcus Poggi
- 12:10** **Branch-and-Price-and-Cut for the Active-Passive Vehicle-Routing Problem**
Christian Tilk, Nicola Bianchessi, Michael Drexl, Stefan Irnich, Frank Meisel
- 12:35** **Lunch**

Session 9

- 14:00** **The Fixed Charge Transportation Problem: A Strong Formulation Based On Lagrangian Decomposition and Column Generation**
Yixin Zhao, Torbjörn Larsson, Elina Rönnberg
- 14:25** **Branch-and-Benders-Cut Algorithms for the Single-Source Capacitated Facility Location Problem**
Furkan Enderer, Claudio Contardo, Bernard Gendron
- 14:50** **Decomposition, Separation, and Inverse Optimization: Some Observations**
Ted Ralphs
- 15:15** **A joint routing and speed optimization problem**
Ricardo Fukasawa, Qie He, Fernando Santos, Yongjia Song