# AMENDMENT TO THE BOOK OF ABSTRACT

## Tue 14:00-16:25 Mini-Symposium

### Computation and Applications

**Room 3** Stochastic dominance in stochastic programming

**Chair:** Rüdiger Schultz

- Stochastic Dominance Almost Everywhere in SP
  - Rüdiger Schultz

- Time-consistent stochastic orders
  - Darinka Dentcheva

- On relations between stochastic dominance efficiency tests and DEA-risk models
  - Martin Branda

- On Stochastic Dominance Constraints measures in multistage mixed 0-1 optimization problems
  - Maria Araceli Garin

- Decomposition Methods for Two-stage Stochastic Linear Semidefinite Programs with Risk Aversion
  - Tobias Wollemberg

## Mon 16:55-19:00 Parallel

### Advances in stochastic programming and contiguous fields

**Room Galeotti** Risk aversion and stochastic dominance

**Chair:** Darinka Dentcheva

- Equivalents and Algorithms for Programs with Stochastic Order Constraints Induced by Linear Recourse
  - Dimitri Drapkin

- Optimization with multivariate stochastic dominance constraints
  - Eli Wolfhagen

- Optimization with Multivariate Conditional Value-at-Risk Constraints
  - Nilay Noyan

- Regularization Methods for Stochastic Order Constrained Problems
  - Gabriela Martinez

- Robustness and bootstrap techniques in portfolio efficiency tests
  - Milos Kopa

## Tue 16:55-19:00 Parallel

### Finance

**Room 4** Real and financial derivatives

**Chair:** Alan King

- A stochastic programming model for hedging options in a market with transaction costs
  - Mathias Barkhagen

- Management of Portfolio of Options With Two Expiration Dates
  - Dmitry Golembiovsky

- Using Malliavin derivative to price an American option under stochastic volatility
  - Mohamed Kharrat

- Investing in complementary renewable sources using stochastic-robust optimization and real options
  - Bruno Fanzeres

- Analysis and Enhancement of Practice-based Methods for the Real Option Management of Commodity Storage Assets
  - Nicola Secomandi
**Tutorial Saturday**
**16:00-17:30**

**Formulations and risk measures**
*Andrzej Ruszczynski*

**Wed 10:45-12:50 Parallel**

**Operations Management and Software**

*Room 10* Solvers for Stochastic Optimization
*Chair: Vittorio Moriggia*

- **A solver for problems with second-order stochastic dominance constraints**
  *Victor Zverovich*

- **Stochastic Decomposition: Motivation, technology and the challenges that it presents.**
  *Francis Ellison*

- **A computational study of on-demand accuracy level decomposition for two-stage stochastic programs**
  *Christian Wolf*

- **A Randomized Metaheuristic for Stochastic Integer Programs with Binary First Stage Variables and Continuous Second Stage Variables**
  *Cristiano Arbex Valle*

- **An open-source solver system for stochastic programming**
  *Horand Gassmann*

*Francis Ellison (with Suvrajeet Sen, Yifan Liu, Gautam Mitra)*

**Stochastic Decomposition: Motivation, technology and the challenges that it presents.**

Stochastic Decomposition (SD), applied to linear, 2-stage recourse problems, is a way of examining potential solutions statistically with a view to reaching an acceptable solution with a minimum of sampling. Observations of the 2nd stage are obtained by Monte-Carlo sampling - applicable equally to continuous as to discrete distributions. We use these observations one at a time using L-shaped methodology to obtain cuts, and, after a certain minimum period, test every solution for the stability that should ensure a good approximation. For convergence a method of regularisation must be chosen, and this may be critical - particularly as the statistical nature of the method means that multiple runs are needed with different start-seeds for the pseudo-random number sequence. The utility of the method is illustrated by the original regularised decomposition method of Ruszczynski, adapted for SD by Sen. Research remains to be done using the Trust Region approach of Linderoth and Wright, also using the Level Method approach of Lemarechal et al. and Fabian.

*Francis Ellison (with Suvrajeet Sen, Yifan Liu, Gautam Mitra)*

**Stochastic Decomposition: Motivation, technology and the challenges that it presents.**

Stochastic Decomposition (SD), applied to linear, 2-stage recourse problems, is a way of examining potential solutions statistically with a view to reaching an acceptable solution with a minimum of sampling. Observations of the second stage are obtained by Monte-Carlo sampling - applicable equally to continuous as to discrete distributions. We use these observations one at a time using L-shaped methodology to obtain cuts. From prior experience, it is known that a method of regularisation may be critical for stability, and for designing effective non-parametric stopping rules. Such rules have the ability to use information revealed during the course of the algorithm to determine how much sampling is called for any given instance, and helps ascertain a sample size that it tailored to the instance at hand. The specific regularization that we use is based on including a proximal term (also known as Tikhonov regularization). We will also report computational results with many of the largest instances in the literature, and provide relatively low confidence bands on upper and lower bounds.
**Wed 10:45-12:50 Parallel**

**Energy**

[Room 3] Bidding in electricity market  
**Chairs:** Stein-Erik Fleten, Trine Krogh Boomsma

- **Bidding in sequential electricity markets: The Nordic case**  
  **Trine Krogh Boomsma**
- **Electricity Market Clearing With Improved Scheduling of Stochastic Production**  
  **Salvador Pineda Morente**
- **Decomposition for day-ahead bidding of hydro power portfolios - experiences and challenges**  
  **Gro Klæboe**
- **Model of Approximate Dynamic Programming Applied on Day-Ahead Trading of a Renewable Producer of Energy**  
  **Vadym Omelchenko**
- **Bidding hydroelectric power via decision rules**  
  **Stein-Erik Fleten**

**Mon 16:55-19:00 Parallel**

**Finance**

[Room 4] Portfolio risk and return analysis  
**Chair:** Sergio Ortobelli Lozza

- **Optimization and performance evaluation in the portfolio selection problem**  
  **Cristinca Fulga**
- **Comparison of back-testing results for various VaR estimation methods**  
  **Ales Kresta**
- **Risk profile versus portfolio selection**  
  **Valeria Caviezel**
- **Portfolio selection with European call and put options**  
  **Marco Cassader**
- **International portfolio selection with Markov processes and liquidity constrains**  
  **Sergio Ortobelli Lozza**

**Mon 10:45-12:50 Parallel**

**Advances in stochastic programming and contiguous fields**

[Room Galeotti] Bounds and SAA methods  
**Chair:** Francesca Maggioni

- **The impact of the spot price modelling on the electricity portfolio optimization problem**  
  **Simone Sbrilli**
- **VSS capture for the two-stage transportation problem with stochastic demand through scenario clustering**  
  **Manuel Cepeda**
- **Bounds in Multistage Stochastic Programs**  
  **Francesca Maggioni**
- **Subgradient Bounds for Convex Dynamic Programs**  
  **David Brown**
- **Some Explicit Results for the Dis-tribution Problem of Stochastic Linear Programming**  
  **Afrooz Ansari-pour**
<table>
<thead>
<tr>
<th>Thu 14:00-16:25 Mini-Symposium</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Computation and Applications</td>
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</tr>
<tr>
<td>[Room 3] Computational SP with risk management and energy applications</td>
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</tr>
<tr>
<td>Chair: Csaba I. Fábián</td>
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</tr>
<tr>
<td>How to exploit oracles with on-demand accuracy in energy problems</td>
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</tr>
<tr>
<td><strong>Claudia Sagastizabal</strong></td>
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</tr>
<tr>
<td>Bundle Methods for Multistage Stochastic Capacity Planning Problems</td>
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</tr>
<tr>
<td><strong>Welington Oliveira</strong></td>
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</tr>
<tr>
<td>Formulation and solver support for optimisation under uncertainty</td>
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</tr>
<tr>
<td><strong>Gautam Mitra</strong></td>
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</tr>
<tr>
<td>Alternative SP formulations of a multi-resource news-vendor problem</td>
<td>Some Explicit Results for the Distribution Problem of Stochastic Linear Programming</td>
</tr>
<tr>
<td><strong>Enza Messina</strong></td>
<td><strong>Afrooz Ansaripour</strong></td>
</tr>
<tr>
<td>Computational aspects of feasibility issues and risk averse optimization</td>
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</tr>
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