UNIVERSITÄT PADERBORN

Program

DSOR / CARISMA Operations Research Workshop

Universität Paderborn, 29 March – 2nd April 2009

www.dsor.de

www.carisma.brunel.ac.uk

Program Day 1: Introduction to Optimisation Modelling

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9:00 – 9:30	Registration and coffee	
9:30 – 10:30	Introduction to Optimisation and Operations Research	Leena Suhl
10:30 – 10:45	Coffee and software break	
10:45 – 12:00	Optimisation modelling and software by example	Achim Koberstein
12:00 – 13:15	Lunch and coffee	
13:15 – 14:15	Basic notions of optimisation models	Achim Koberstein
14:15 – 14:30	Coffee break	
14:30 – 15:30	Modelling techniques for Linear Programs	Achim Koberstein
15:30 – 16:00	Exercise and coffee I	
16:00 – 17:00	Modelling techniques for Mixed Integer Programs	Veronika Waue
17:00 – 17:30	Exercise and coffee II	

Program Day 2: Optimisation Methods and Software

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9:00 – 9:30	Registration and coffee
9:30 – 10:30	A solution method for Linear Programming Problems: The Simplex Method Achim Koberstein
10:00 – 10:30	Exercise with coffee
10:30 – 11:30	A solution method for Mixed Integer Programming Problems: The LP-based branch-and-bound method Achim Koberstein
11:30 – 13:00	Lunch and coffee
13:00 – 14:00	Advanced Integer Programming: Strong model formulations and LP-based Branch-and-Cut Veronika Waue
14:00 – 14:15	Coffee break
14:15 – 15:15	Software architectures of Optimisation Systems Peter Ingerfeld
15:15 – 15:30	Coffee break
15:30 – 16:30	An overview of MOPS: A state-of-the-art high speed LP and MIP-solver Uwe Suhl
16:30 – 17:00	Discussion and feedback Achim Koberstein

Program Day 3: Optimisation under Uncertainty I

CARISMA

9:00 - 9:30	REGISTRATION AND COFFEE	
9:30 -10:30	Stochastic Programming: optimum decision making under uncertainty: an overview	Gautam Mitra
10:30-11:00	Stochastic Programming and Risk Measures	Gautam Mitra
11:00-11:30	An Introductory Example to Stochastic Programming	Achim Koberstein
11:30-12:00	COFFEE BREAK	
12:00-12:45	Two Stage SP: Expected Value, Scenario Analysis and Deterministic Equivalent Approaches	Katharina Schwaiger, Christian Valente
12:45-13:30	Lunch	
13:30-14:30	Hands-on Modelling: Expected Value, Wait and See, and Two-Stage SP Models: An ALM Model	Katharina Schwaiger, Christian Valente, Victor Zverovich
14:30-15:15	Stochastic Extensions to AMPL: SAMPL and SPInE	Christian Valente
15:15-15:45	SPInE example: An ALM model expressed in SAMPL	Christian Valente
15:45-16:00	TEA BREAK	
16:00-17:30	Workshop on SPInE: Hands on Some Models in SAMPL	Katharina Schwaiger, Christian Valente, Victor Zverovich

Program Day 4: Optimisation under Uncertainty II

9:00-9:30	COFFEE	
9:30-10:00	Stochastic Programming and Scenario Generation: A (DSS and Simulation) Modelling Perspective	Gautam Mitra
10:00-10:30	Scenario Generation: Overview and Desirable Properties	Gautam Mitra
10:30-11:00	COFFEE BREAK	
11:00-12:30	Workshop on SPInE: Hands on stochastic models	Katharina Schwaiger, Christian Valente, Victor Zverovich
12:30-13:30	LUNCH	
13:30-14:00	Solution Methods for Stochastic Programming	Victor Zverovich
14:00-14:30	Accelerating Benders Decomposition through Regularisation	Csaba Fabian
14:30-15:00	Optimising the Conditional Value at Risk	Csaba Fabian
15:00:15:45	Strategic gas purchase portfolio planning for public utilities under uncertainty	Achim Koberstein
15:45-16:00	TEA BREAK	
16:00-17:00	Hands on: Chance Constraint and Integrated Chance Constraint formulations of Dakota and ALM models	Katharina Schwaiger, Christian Valente, Victor Zverovich
17:00-17:15	Discussion and feedback	