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EDITORIAL

Editorial

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This special issue is based on presentations at the eighth International Conference on Computational Management Science held at the University of Neuchatel, Switzerland. The topics covered highlight the role played by computational techniques to solve relevant real-world problems in management science.

The CMS conference is an annual meeting associated with the journal of Computational Management Science. The aim of this conference is to provide a forum for theoreticians and practitioners from academia and industry to exchange knowledge, ideas and results in a broad range of topics relevant to the theory and practice of computational methods, models and empirical analysis for decision making in economics, engineering, finance and management. The focus is on all computational aspects of management science: theoretical and empirical studies of computational methods, models and empirical analysis. These include computational economics, finance and statistics, energy, scheduling, supply chains, design, analysis and applications of optimisation algorithms, deterministic, dynamic, stochastic, robust and combinatorial optimisation models, solution algorithms, learning and forecasting such as neural networks and genetic algorithms, models and tools of knowledge acquisition, such as data mining, and all other topics in management science with the emphasis on computational paradigms.

In the first paper, *Andreas Eisenblätter* and *Jonas Schweiger* present a planning approach for mobile communication networks based on multistage stochastic programming. The authors model the demand evolution as a stochastic process, and they determine a profit-maximizing network expansion plan. The approach proves capable

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of designing large-scale realistic UMTS networks with a time-horizon of several years. In the second paper, *Dmitry Krushinsky* models and solves the cell formation problem using a multi-cut representation. The developed formulations can account for several real-world constraints, and the paper presents experimental results with real manufacturing data. In the third paper, *Mort Webster*, *Nidhi Santen* and *Panos Parpas* present a stochastic dynamic programming formulation of the Dynamic Integrated Model of Climate and the Economy (DICE). The authors develop approximate dynamic programming techniques to solve this problem under uncertainty about technological changes, and they present numerical results for two different value function approximations. *Agnes Gorge*, *Abdel Lisser* and *Riadh Zorgati* discuss the stochastic scheduling of nuclear power plant outages. They propose a stochastic formulation with a discrete distribution for random variables, that leads to a mixed 0/1 Quadratically Constrained Quadratic Program (QCQP) and investigate semidefinite relaxations for solving this hard problem. Their numerical results on several instances of the problem show the efficiency of this approach. *Daniel Ziegler*, *Katrin Schmitz* and *Christoph Weber* investigate the impact of different ways to model price movements in a portfolio selection model for the German electricity market. Their analysis shows that the chosen price process assumptions have a significant impact on the resulting portfolio structure and the weights of individual technologies. *Jacques Savoy* and *Olena Zubaryeva* propose an efficient classification scheme for text categorization. They use their proposed approach to categorize speeches given by B. Obama and compare their proposed approach with a Support Vector Machine (SVM) model and a Naive Bayes classifier.

Both the quality and the quantity of submissions to this special issue illustrate the important role that computational techniques play in current management science research. Due to the high complexity surrounding quantitative models, research on computational management science is likely to be of increasing significance in the future.