

Special Issue: Selected Best Papers of  
2008 International Workshop on Modelling, Simulation and Optimization (WMSO 2008)

## Guest Editorial

Modelling, simulation and optimization are becoming increasingly interesting to both the academic researchers and engineering practitioners. WMSO serves as a forum for researchers, industry professionals and academics who are interested in the latest development of modelling, simulation and optimization. WMSO 2008 has been held at Hong Kong on 27-28 December 2008. WMSO 2008 has received 451 submissions and 107 papers were published in the proceedings. In this special issue, 10 outstanding papers are selected from WMSO 2008 and all papers contain 30% more new material than that presented in the workshop. In this special issue, the key ideas of all papers are listed as follows.

DongXiao Niu and JianJun Wang presented and discussed a novel method for short-term forecasting, which combines text mining and corrective neural network (TM-CNN). The experiment results reveal that TM-CNN method outperforms ARMA and BP Artificial Neural Network approaches. Jicheng Ding, Lin Zhao and Weiquan Huang demonstrated a GPS receiver research platform which can generate digital Immediate Frequency (IF) GPS signal and some signals synchronize functions on high dynamic and weak signal environment. Aiming at tracking degraded signal, an errors tracking scheme based on modified Unscented Kalman Filtering (UKF) is designed and implemented in their paper. Yazao Yang, Wenzhou Jin and Xiaoni Hao suggested a three-tier structure to describe the logistics management relations among each leasing sites. Based on the logistics operation characteristics and practical administration demand, a dynamic model and its algorithm are proposed for pool segmentation in the car rental industry. Yongxiu He, Weihong Yang, et al. proposed a combined cellular automation model to simulate the urban land function evolvement and forecast the urban electric load through integrating Cellular Automation with Markov Model, electric load density and simultaneity factor.

Xiaochu Liu, Qitao Huang, et al. put forward a new modeling software, AMEsim, to develop a nonlinear model for a higher performance three stage electro-hydraulic servo valve. Hua Jiang and Junhu Ruan proposed an anomaly intrusion detection model, which combined the good global searching ability of genetic algorithm with the accurate local searching feature of BP networks to optimize the initial weights of neural networks. Jinrong Zhu suggested a modified particle swarm optimization algorithm. In the presented algorithm, every particle chooses its inertial factor according to the approaching degree between the fitness of itself and the optimal particle. Simultaneously, a random number is introduced into the algorithm in order to jump out from local optimum and a minimum factor is used to avoid premature convergence in his study.

Liu-Juan Zhu, Wen-Zhong Cai and Shan-Tung Tu developed a methodology to perform finite element simulations on complex three-dimensional microstructures of particle-reinforced composites. It highlights the dominant influence of realistic microstructural features on computational micromechanics and is promising for composites design and application. Lin Xu, Xiaoming Wu, et al. proposed an AEI-CPR model based on genetic algorithm to obtain optimum time sequence of Enhanced External Counter-Pulsation compressing on the lower limbs. Jun Yuan, Yongchao Zhu and Minzhe Wu employed an analytical dynamic model to assess vibration characteristics and effectiveness of floating slab system. In their paper, reasonable ranges of parameters are also given to provide reference for design under the security and stability conditions.

We would like to express our appreciation to the authors of the ten papers who made this special issue possible. Our sincere thanks also go to the referees who have provided their review reports in a timely manner and to the Editorial Board of the Journal of Computers for the helpful instructions and guidance.

**Guest Editor:**

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