Monday

MA-04 has moved to MC-04

Title change:

MA-04

Monday, 8:30-10:00

O4-4

Complementarity Problems and Variational Inequalities 1
Cluster: Mathematical Programming
Invited session
Chair: Sandor Zoltan Nemeth

MA-15

1 - Comparative Analysis of Differential Evolution, Firefly and Genetic Algorithms on Dynamic Environments
Burcin Ozzoydan, Adil Baykaso?lu

2 - Optimizing intrusion detection system performance in ubiquitous environments using genetic algorithm approach
Lynda Sellami

Cancellation

Internet decision system for combinatorial optimization problems under permutation
Lamia Trabelsi, Talel Ladhari

4 - A Genetic Algorithm Based Approach for Operator Allocation Problem in Garment Industry with the Consideration of Labour Skill Levels
Derya Dengi, Gonca Tuncel

MA-50

1 - A Markov Chain Approximation to Choice Modeling
Vineet Goyal, Guillermo Gallego, Jose Blanchet

2 - Assortment Optimization and Pricing under Multi-Level Nested Logit Model
Huseyin Topaloglu, Guang Li, Paat Rusmevichientong

3 - Assortment Optimization Under General Choice
Srikanth Jagabathula, Vivek Paria, Devavrat Shah

Cancellation

Pricing Managed Lanes
Robert Phillips

MC-04 has moved to MA-04

Title change:

MC-04

Monday, 12:30-14:00

O4-4

Complementarity Problems and Variational Inequalities 2
Cluster: Mathematical Programming
Invited session
Chair: Goran Lesaja

Title change:

MC-08

Monday, 12:30-14:00

O3-2

Tutorial - S. Dauzère-Pérès
Cluster: Invited Lectures - Keynotes and Tutorials
Invited session
Chair: Christian Prins

MC-11

Cancellation

A Column Generation Algorithm for Communication Systems with High Error Correction Capability
Banu Kabakulak, Z.Caner Taskin, Ali Emre Pasane

2 - A new algorithm for blind separation of discrete signals used in digital communications
Abdenour Labed

Cancellation

The joint power control and spectrum allocation problem in cognitive networks
Abdelkader Toumi, Malika Babes

4 - A Scatter Search Algorithm for a Bi-level Topological Design of LANs
José-Fernando Camacho-Vallejo, Julio Mar-Ortiz

MC-32

Cancellation

A new enhancement of the heuristic for the vehicle routing problem
Andrey Zyatkin

2 - Coordination of Supply Chain with Stochastic Demand by Delay-in-Payment Contract
Xiaobo Zhao, Deng Gao

3 - RFID applications for distribution management on retail trade
Joachim R. Daduna

4 - Analysing the effects of cost allocation methods for the cooperative facility location problem
Lotte Verdonck, Gerrit K. Janssens

MC-51

1 - On optimal partial hedging in incomplete discrete markets
Alexey Soloviev, Vladimir Morozov
2 - An Intelligent Water Drops Algorithm Combined with Differential Evolution Algorithm for Solving Cardinality Constrained Portfolio Optimization Problems  
Mualla Gonca Yunusoglu, Adil Baykasoglu

3 - On the Impact of Copulas on VaR Forecasts: A Simulation Study  
Theo Berger

Paper moved to session HB-51
Portfolio Choice in Markets with Contagion  
Yacine Aït-Sahalia, Tom Hurd

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MC-62

1 - Quadratic Outer Approximation for Convex Integer Programming  
Long Trieu, Christoph Buchheim

2 - A Branch and Bound Approach for the Optimal Control of System Dynamics Models  
Ingmar Viehhaus, Armin Fügenschuh

3 - Mixed Integer Gomory Cuts for Quadratic Programming: The Power of Extended Formulations  
Juan Pablo Vielma, Sina Modaresi, Mustafa Kilinc

Cancellation  
Intersection cuts for Mixed Integer Conic Quadratic Sets  
Kent Andersen

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MD-45

1 - A theory for the optimal government debt control: explicit formula for the optimal debt ceiling  
Abel Cadenillas, Ricardo Huaman

2 - A polyhedral complementarity approach for searching an equilibrium in linear exchange models  
Vadim Shmyrev

3 - Alternative versions of the Global Competitiveness Ranking: a Social Choice approach  
Andrey Subochev, Fuad Aleskerov, Igor Zakhlebin

Cancellation  
The imperfect competition in spatially price models of economic systems  
Alexey Kovalenko

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MD-72

1 - A Modified Gravity Model for Mexico - U.S. Migration Data  
Duygu Cinar, Deniz Duman, Linet Ozdamar

2 - Corporate foresight and strategic decision making: Dealing with societal complexity  
Ulrike Reisach

3 - Is topological invariance a reasonable assumption for studying social systems too? Methodological remarks on the application of NK simulation modeling  
Lucio Biggiero

Paper moved to session TD-45  
Energy Efficiency and Climate Change  
Sudhakara Reddy

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MD-74

Cancellation  
Developing OR application skills with AIMMS: a bridge in OR education  
Ovidiu Listes

2 - Educational Outreach Activities: Playing OR Games!  
Paul Harper, Vincent Knight, Louise Orpin

3 - Production and Operations Management in the LegoFactory  
Evelyn Richards

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Tuesday

TA-04

1 - Trace-Penalty Minimization for Large-scale Eigenspace Computation  
Yin Zhang, Zaiwen Wen, Chao Yang, Xin Liu

2 - A simple and original method to obtain the optimal power operating point of the solar cell  
Jaleeddine Ben Amor

3 - Inexact BOSVS Algorithm for Ill-Posed Inversion with Application to Parallel Image Reconstruction  
Maryam Yashtini, William Hager, Hongchao Zhang

Paper added to session

4 - A modification of discrete Raiffa’s solution for three-player bargaining problems  
Milan Vlach, Theoretical Computer Science and Mathematical Logic, Charles University, Malostranske namesti 25, 118 00 Prague 1, 118 00, Prague, Czech Republic, mvlach@ksi.ms.mff.cuni.cz

Since Nash’s papers on bargaining and Raiffa’s studies on arbitration schemes in the beginning of 1950’s, it has become customary to present a cooperative bargaining problem as a nonempty collection B of pairs (S, d) where each S is a nonempty subset of a finite-dimensional real linear space endowed with the Euclidean metric, and d is a point in S. We propose an alternative stepwise solution for three-player problem that generalizes Raiffa’s solution. The solution is based on the existence of a unique finite stable set in the individually rational region of (S, d).

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TA-05

1 - Pareto-Nash-Stackelberg control problems: mathematical models and principles of solving  
Valeriu Ungureanu

Cancellation  
A noncooperative differential game of a stochastic productive asset  
Ricardo Josa-Fombellida, Juan Pablo Rincon-Zapatero

3 - Cooperative and non-cooperative trade-offs among design quality and cost-reducing r&d in a supply chain  
Juan Carlos Espinoza Garcia, Fouad El Ouardighi, Victoire Denoyel

4 - Non-Linear Strategies in Differential Games: A Numerical Investigation  
Guioamar Martin-Herran, Javier de Frutos
Title change:
■ TA-46
Tuesday, 8:30-10:00
Y10-1
**Game-theoretical applications in sustainable supply chains**
Cluster: Game-theoretical Models in Operations Research
*Invited session*
Chair: Gokce Esenduran

■ TA-69
1 - **Integrated Energy Planning at the Block Level**
Subhash Datta
2 - **The Role of Geographic Information Systems in the Energy Sector in India**
Badri Toppur
3 - **Application of DEA to Define the Revenues of Brazilian Power Transmission Companies**
Tiago Soares, Rajiv Banker, Ana Lopes
*Paper moved to session WA-69*

Economic Sentiment Indicator and Business Survey Liquidity Measure in Forecasting Changes in Industrial Production- the Case of Croatia
Mirjana Cizmesija, Natasa Erjavec, Vlasta Bahovec

■ TB-41
1 - **Measuring the efficiency of police stations efficiency in Slovenia: an application of a multi-stage data envelopment analysis**
Jernej Mencinger, Aleksander Aristovnik

2 - **Wineries’ performance, response to a crisis period**
Katrin Simon-Elorz, Juan Sebastián Castillo, Maria Carmen Garcia-Cortijo
*Cancellation*

Efficiency and risk in the Greek banking industry
Ioannis Tsolias
*Paper moved from session HA-40*

4 - **Estimating Technical and Allocative Efficiency of Australian Schools**
John Ruggiero, Vincent Blackburn, Shae Brennan

■ TB-44
*Cancellation*
On the convergence to Walrasian prices in random matching Edgeworthian economies
Bruno M.P. M. Oliveira, Alberto Pinto, Luis Ferreira, Barbel Finkenstadt, Athanasios Yannacopoulos

2 - **Influence of individual decisions in competitive market policies**
Alberto Pinto, Renato Soeiro, Abdelrahim Mousa

3 - **Two characterizations of the Shapley value for regression games**
Enrique González-Arangüena, Rene van den Brink, Conrado M. Manuel

■ TB-51
1 - **Quantile Hedging in Discrete Time**
Erdinc Akyildirim

2 - **Investment strategies under debt issuance amount constraints**
Takashi Shibata, Michi Nishihara

3 - **Design and Pricing of Derivative Contracts in a Spectrum Market**
Aparna Gupta, Praveen Kumar Muthuswamy, Koushik Kar
*Paper moved to session WD-51*

Data Sampling Frequency and Stochastic Processes of Bond Rates and Currencies
A. Can Inci

■ TB-60
*Cancellation*

Georgian SME business development analysis:
*Case Study*
Shorena Kalandarishvili, Levan Labadze

2 - **The Influence of Financial Crisis on UK SMEs**
Meng Ma, Jake Ansell, Galina Andreeva

3 - **Using DTW for Clustering Time Series and Finding Leading Series**
Efe Pınar, Ozden Gur Ali

4 - **Incorporating measures of evolution of customer choice behavior in churn prediction**
Andrey Volkov, Dirk Van den Poel, Anita Prinzé

■ TC-13
1 - **Modeling effect of car ownership on activity time allocation**
Yan Yin, Zhi-chun Li

2 - **A Simulation Based Optimization Method in Determining Time Varying Pricing of Toll Roads**
Lei Zhang, Xiang He, Xiqun (Michael) Chen, Chenfeng Xiong

3 - **Throughput and waiting times at unsignalised intersections**
Hannah Van den Bossche, Dieter Fiems, Herwig Bruneel

*Cancellation*
Offering more choices to travellers to mitigate undesired boundary effects of traffic congestion charging
Yingen Ge

■ TC-19
1 - **Environmental Effects of EVs and Location of Charge Stations**
Damla Sener, Metin Turkay

2 - **stochastic network design problem under probabilistic constraints with continuous random variables and efficient methods to solve them.**
Olga Myndyuk

3 - **An efficient exact solution approach for the Traveling Repairman Problem on a Line**
Stefan Bock
*Paper added to session*

4 - **Multi-commodity reliable facility location problem: A scatter search based approach**
Sumanta Basu, Operations Management, Indian Institute of Management Calcutta, K-302, New Academic Block, IIM Calcutta, D.H. Road, Joka, 700104, Kolkata, West Bengal,
Logistics and supply chain network design problems are often modelled as discrete facility location problems. A majority of these models assume that the facilities once located, will be available all the time. This assumption does not hold true in reality. We relax this assumption in the context of the single stage multi-commodity capacitated facility location problem and incorporate the non-availability of facilities. We develop a scatter search based solution approach for this problem and compare the results obtained by using different criteria for selecting the facilities.

Title change:

TD-26 has moved to WD-27

Tuesday, 14:30-16:00
G9-7

Large-scale vehicle or crew scheduling problems solved with constraint aggregation

Cluster: Combinatorial Optimization II

Invited session

Chair: Francois Soumis

TD-45

1 - Congestion Management in Electricity networks: evidence from EU electricity markets
Silvia L. Vitiello

2 - Optimum Energy Portfolio using Genetic Algorithm with Random Walk Selection
Secil Ercan, Gulgun Kayakutlu

3 - Optimization of Turkey’s Natural Gas Policy using Fuzzy Mathematical Programming
Serhat Tunuz, Tufan Demirel

Paper moved from session MD-72

4 - Energy Efficiency and Climate Change
Sudhakara Reddy

TD-57

1 - Retail pricing and promotion design through customer segmentation
Pavankumar Murali, Wei Sun, Anshul Sheopuri

Cancellation

Optimal Timing for a Newsvendor Problem with In-season Price Adjustment
Piotr Stalinski, Chia-Shin Chung

3 - Chasing Demand: Pricing and Learning in a Changing Environment
Bora Keskin, Assaf Zeevi

TD-60

1 - Modelling the Extreme Precipitation Data: Case Study from Turkey
Buyra Aksoy, Vilda Purutcuoglu, Inci Batmaz, Ceylan Yozgatligil

2 - Cross-Selling Models for Private Banking — Which data are useful?
Ozden Gur Ali, Haldun Aytug, Mehmet Hamdi Ozcelik

3 - The Use of a Memetic Algorithm at the Evacuation Plan Design
Lubomir Toman

Cancellation

Customers Walking Patterns and Influence on Their Shopping Behavior
Marina Kholod
Wednesday

■ WA-08 has moved to HA-08

Title change:
■ WA-08

Wednesday, 8:30-10:00
O3-2

Tutorial - R. Vohra
Cluster: Invited Lectures - Keynotes and Tutorials
Invited session
Chair: Kenneth Sørensen

■ WA-57

1 - Using the Newsvendor Game as a new research environment for behavioral OM and Marketing
   Abraham Seidmann, Tong Wu

2 - Optimizing Skippable and Non-Skippable Advertisements for Video Sharing Websites
   Soumyakanti Chakraborty, Sumanta Basu, Megha Sharma
   Cancellation
   New product pricing policy and reward programme in the existence of taste effect and word of mouth effect
   Wu Lingli

■ WA-69

1 - Closed-Loop Supply Chain Network Design Model For Remanufacturing in Turkey’s Mobile Phone Market
   Asl? Özmen, Ismail Erol

2 - Performance Efficiency of DMMMSU Colleges and Institutes: A Data Envelopment Analysis (DEA) Study
   Milagros Baldemor

3 - Mechanisms for resolving framework of conflict in the border area of transition from one state to another in the logistics and customs sphere
   Irina Kazina
   Paper moved from session TA-69

4 - Economic Sentiment Indicator and Business Survey Liquidity Measure in Forecasting Changes in Industrial Production- the Case of Croatia
   Mirjana Cizmesija, Natasa Erjavec, Vlasta Bahovec
   Cancellation
   Online Global Trading Marketplace as a Buyer-Seller Social Network: A Study of Implicit Social Interactions in Developed versus Emerging Markets
   Yubo Chen, Qi Wang, Jinhong Xie, Jurui Zhang

■ WA-70

1 - The effect of the ethical leadership on perceived organizational justice and organizational identification of the employees: the case of tourism businesses
   ?ükran Öktem, Hakan Turgut, Gözde Kubat

2 - Identifying a System of Bribery in Business Transactions
   Sule Onsel Ekici, Ahmet Ekici

3 - Study of awareness rate of patients from prism of patient rights.
   Mohammad Reza Bateni, Shahla Shiranifard
   Cancellation

   The contribution of corporate governance to bank stability
   Aristotelis Boukouras, Davide Mare

■ WB-12

1 - Tackling key strategic decisions of the chocolate-producing companies: A system dynamics approach
   Tatiana Boyarskaya, Evgenia Ushakova

2 - Group Buying Schemes - A Sustainable Business Model?
   Sebastian Koepp, Aliaksei Mukhachou
   Cancellation
   Bootstrapping for Confidence Interval Estimation in the Taylor Rule Model for Monetary Policy in Brazil
   Felix Neugebauer

4 - Modelling a Sovereign Debt Crisis: the case of Jamaica
   Brian Dangerfield, Jide Lewis

■ WB-66

1 - Closed loop supply chain networks design in Presence of Distributed Generation(DG): Benders decomposition approach
   Salman Khodayifar, Hassan Salehi Fathabadi, Mohammad Ali Raayatpanah, Hamed Rahimian

2 - Green vehicle routing problem with time windows
   Asli Aksay, Seval Ene, Ilker Küçüko?lu, Nursel Ozturk
   Cancellation
   Are carbon footprint become a barrier trade for developing countries?
   Mahmoud Nawar

4 - Distribution centers to improve the supply chain efficiency and sustainability of the system.
   Elisabeth Freitas Rodrigues, Nelio D Pizzolato

■ WC-07

1 - Solving polynomial bilevel problems
   Philipp Renner

2 - Containment problems for polytopes and spectrahedra
   Christian Trabandt, Kai Kellner, Thorsten Theobald

3 - Using column generation to improve the sum of squares representation of a polynomial optimization problem
   John Mitchell, Tim Lee
   Cancellation
   Lower Bounds for a Polynomial on a basic closed semialgebraic set using geometric programming
   Mehdi Ghasemi

■ WC-26

1 - The Micks: A polynomial class of "strong" inequalities for the packing knapsack
   Sunil Chopra, Sangho Shim

2 - Localized Local Branching
   Emanuele Manni, Gianpaolo Ghiani, Gilbert Laporte
   Cancellation
On cut generating sets and their use in mixed integer programming
Egon Balas

Paper added to session

4 - A Reduced-Cost Iterated Local Search Heuristic for the Fixed Charge Transportation Problem
Paolo Toth, DEIS, University of Bologna, Viale Risorgimento 2, 40136, Bologna, Italy, paolo.toth@unibo.it, Erika Buson, Roberto Roberti

The Fixed Charge Transportation Problem (FCTP) generalizes the Transportation Problem by considering an additional fixed cost for sending a flow from an origin to a destination. We describe an ILS heuristic based on reduced costs to guide the restart phase. The reduced costs are obtained by a lower bounding procedure that computes a sequence of increasing lower bounds by solving a three-index formulation strengthened with valid inequalities. The heuristic provided new best-known upper bounds on 123 of the 124 open benchmark instances from the literature within five minutes of computing times.

WC-49

1 - The Impact of dog celebrity type and consumer involvement on the efficiency of internet banner advertisement in the dog-allowed restaurant
Chin-Yi Fang, Chieh-Ju Chu

Cancellation

Balancing the trade-off between privacy and profitability in social media using NMASNT
Devina Vyas, Rahul Ranjan, Charul Charul, Durga Prasad Guntoju

3 - Deploying Dynamic Ensemble Selection To Tackle Concept Drift in Predictive Customer Analytics
Koen W. De Bock

New session:

WD-08

Wednesday, 14:30-16:00

Keynote - F. Vanderbeck
Cluster: Invited Lectures - Keynotes and Tutorials
Invited session
Chair: Gerhard-Wilhelm Weber

WD-22

1 - A heuristic solution approach for the assembly line worker integration and balancing problem
Mayron Cesar Oliveira Moreira, Alysson M. Costa, Cristobal Miralles

Cancellation

Effectiveness of assigning intermediate milestones to outsourced projects for avoiding tardy completion
Changmuk Kang, Byung-Cheon Choi

3 - Scheduling a Satellite Downlink: Real Time Solutions for a Constrained Minimization Problem
Fattaneh Cauley, Stephen Cauley

4 - On scheduling models for the multiple carrier frequency assignment problem with cumulative interferences
Christian Artigues, Kata Kiathanaraj, Laurent Houssin

WD-27 has moved from TD-26

Wednesday, 14:30-16:00

G9-8

Integral Simplex Using Decomposition
Cluster: Combinatorial Optimization I
Invited session
Chair: Francois Soumis

WD-34

1 - An inventory optimization technique based in minimizing lost sales
Fernando Paredes, Javier Pereira, Claudio Fuentes

2 - Myopic replenishment policies for lost-sales inventory systems
Marco Bijvank

3 - A New Heuristic For an Inventory System with Random Yield and Positive Lead Time
Wanrong Ju, Adriana F. Gabor, Jan-Kees van Ommeren

Cancellation

Optimal control of an inventory-production system with state-dependent random yield
Gudrun Kiesm"uller

WD-35

Cancellation

Trucks fleets routing for vehicle transportation
Alain Nguyen, Jean-philippe Brenaut

2 - Incorporating inventory decisions in location-routing problems
Wenyih Lee

3 - A leveled inventory routing approach for planning periodic milk-runs
Martin Grunewald, Thomas Volling, Thomas Spengler

WD-51

1 - Multilevel Monte Carlo Methods for Pricing of American Options
Denis Belomestny

2 - A Riskless Asset Strictly Enhances the Best Sharpe Ratio in a Multi-Period Setting
Li Zhongfei

3 - Multilevel policy iteration for pricing American options
Marcel Ladkau, Denis Belomestny

Paper moved from session TB-51

4 - Data Sampling Frequency and Stochastic Processes of Bond Rates and Currencies
A. Can Inci

WD-74

1 - Uncovering the hidden world of O. R.; the secret science of system improvement
Geoff Royston

2 - Improving the Relevance and utility of Evaluation in Educational Development Processes: A Viable Systems Approach
Diane Hart, Alberto Paucar-Caceres

Cancellation

A Dynamic Nonlinear Model for Educational Systems: A Simulation Study for Primary Education
Roy Zu"niga, Luis Lopez
4 - Two-variable linear programming: a graphical tool
Susana Fernandes, José Pereira  
*Paper moved from session HA-12*

5 - Decoding the dynamics of crime
Luis Lopez, Roy Záñiga

Thursday

**HA-08 has moved to WA-08**

**HA-08 has moved from WA-08**

Thursday, 8:30-10:00  
O3-2

Tutorial - G. Raidl
Cluster: Invited Lectures - Keynotes and Tutorials  
*Invited session*
Chair: Tamás Terlaky

**HA-12**

1 - Solving Generalized Nash Games with Shared Constraints through Evolutionary Variational Inequalities  
Monica-Gabriela Cojocaru

2 - Optimal Strategy and Pricing on the CLSC with Buy-back and Remanufacturing  
Zhaowei Miao, Zhiquiang Xia

3 - A System Dynamics application to strategic marketing  
Suzanne van Staveren, Rasa Cincyte  
*Paper moved to session WD-74*

Decoding the dynamics of crime  
Luis Lopez, Roy Záñiga

**HA-17**

1 - Designing liner shipping networks  
Judith Mulder, Romynter Dekker

2 - An algorithm for solving the time-constrained multicommodity flow problem with applications in liner shipping network design  
Christian Vad Karsten, David Pisinger, Stefan Ropke

3 - A branch-and-price approach to the network design problem in liner shipping  
Kristian Thun, Henrik Andersson  
*Cancellation*

A decision support tool for liner shipping network design  
Berit Dangaard Brouer, Guy Desaulniers

**HA-36**

1 - A hybrid algorithm of Particle Swarm Optimization and Genetic Algorithms for the non-guillotine two-dimensional single knapsack problem  
Luis Miguel Escobar Falcón, David Álvarez, Eliana Mirledy Toro Ocampo, Rubén Augusto Romero Lázaro  
*Cancellation*

Applying packing algorithms within a manufacturing automation context in a concrete factory  
Andrey Ermakov, Anton Ryzhikov, Anton Firsov

3 - A New Branch-and-Cut Algorithm for the Orthogonal Strip Packing Problem  
Marat Mesyagutov, Guntram Scheithauer, Gleb Belov

**HA-40**

1 - Performance Evaluation of Regional Railways: Case of I.R. Iran Railway  
Hamid Reza Ahadi, Zahra Saghian

2 - Evaluating the performance of UEFA Champions League scorers  
Christos Papahristodoulou

3 - Evaluation of undergraduate courses using a non-radial Data Envelopment Analysis model  
Silvio Gomes Júnior, João Carlos Soares de Mello, Lidia Angulo-Meza, Andre Gomes, Gilson Lima  
*Paper moved to session TB-41*

Estimating Technical and Allocative Efficiency of Australian Schools  
John Ruggiero, Vincent Blackburn, Shae Brennan

**HB-02**

1 - Analysis of threshold dynamics of epidemic models in a periodic environment  
Cansu Evcin, Ömür Ugur

2 - Higher-Order Numerical Methods for the Discrete Dynamics and Anticipation of Genetic Regulatory Systems  
Ozlem Defterli, Armin Fügenschuh, Gerhard-Wilhelm Weber  
*Cancellation*

Modified Adaptive Control Method for synchronization of fractional order chaotic systems  
Subir Das

4 - Constrained Nonlinear Optimization Problem with Fractional Order Dynamical System  
Firat Evirgen

**HB-51**

1 - Robust Portfolio Selection via Learning with Mixture Model  
Shushang Zhu, Minjie Fan, Duan Li

2 - Coherent risk minimization-based SVMs and its application to credit rating  
Jun-ya Gotoh, Akiko Takeda, Rei Yamamoto  
*Cancellation*

Optimal Execution Problem under CVaR Framework  
Mengfei He, Duan Li

4 - Dynamic mean-risk portfolio management with two risk measures in continuous-time  
Jianjun Gao  
*Paper moved from session MC-51*

5 - Portfolio Choice in Markets with Contagion  
Yacine Ait-Sahalia, Tom Hurd

**HB-58**

1 - A risk analysis based on a two-stage delayed diagnosis regression model  
Xin Shi

2 - Forecasting and Minimizing The Failures Of Pipe Industry With Logistic Regression Models  
Gizem Kavlak
<table>
<thead>
<tr>
<th>HB-74</th>
<th>1 - Teaching Business Analytics to Undergraduate</th>
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| 3 | - Clustering using Xavier Hyperbolic Smoothing Clustering Method and Parallel Computing  
  Sergio B. Villas-Boas, Marcelo Lins, Adilson Elias Xavier  
  Cancellation |
| | - Exploiting the Anomaly Detection for High Dimensional Data using Descriptive Approach of Data Mining  
  Bharat Singh, Nidhi Kushwaha, O. P. Vyas |
| |  Students with R AnalyticFlow  
  Yuji Nakayama, Tomonori Ishigaki, Nagateru Araki, Hiroyuki Morita, Masashi Kondo |
| | 2 - Determining the most appropriate special education and rehabilitation center by the moora method  
  Gökhan Öztekin, Emel Kızılçay Aydoğan, Cevriye Gencer  
  Cancellation  
  O.R. education administration  
  Erwin Reizes |