

# **Proceedings of the 2012 Winter Simulation Conference**

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Toshiya Kaihara, Yoshihiro Yao

### ***MASM Keynote***

## **MASM Keynote**

Kurt Gruber

### ***Modeling Techniques***

#### **Simulation-Based Optimization Method for Release Control of a Re-entrant Manufacturing system**

Li Li, Peng Linhao, Li Yunfeng

#### **An MVA Approximation for CONWIP Priority Modeling**

Guy Curry, Moonsu Lee

#### **A Mathematical Model For Estimating Defect Inspection Capacity With A Dynamic Control Strategy**

Gloria Luz Rodriguez Verjan, Stephane Dauzère-Pérès, Jacques Pinaton

### ***Production Planning in Semiconductor Manufacturing***

#### **Product Mix Optimization for a Semiconductor Fab: Modeling Approaches and Decomposition Techniques**

Andreas Klemmt, Martin Romauch, Walter Laure

#### **Using Iterative Simulation to Incorporate Load-Dependent Lead Times in Master Planning Heuristics**

Lars Moench, Thomas Ponsignon

#### **One Solver for All - A Generic Allocation Concept for Planning and Shop Floor Control**

Sebastian Werner, Frank Lehmann, Andreas Klemmt, Joerg Domaschke

### ***Quality Control in Semiconductor Manufacturing***

#### **Optimized Inspection Capacity for Out of Control Detection in Semiconductor Manufacturing**

Israel Tirkel

#### **Setting Quality Control Requirements To Balance Between Cycle Time and Yield - The Single Machine Case**

Michael Hassoun, Liron Yedidsion, Miri Gilenson

#### **Industrial Implementation of a Dynamic Sampling Algorithm in Semiconductor Manufacturing: Approach and Challenges**

Justin Nduhura Munga, Stephane Dauzère-Pérès, Claude Yugma, Philippe Vialletelle

### ***Scheduling Approaches in Semiconductor Manufacturing***

#### **Using simulation and hybrid sequencing optimization for makespan reduction at a wet tool**

Anna Rotondo, John Geraghty, Paul Young

#### **Scheduling Jobs with Time Constraints between Consecutive Process Steps in Semiconductor Manufacturing**

Andreas Klemmt, Lars Moench

#### **Simulation-based Multi-mode Resource-constrained Project Scheduling of Semiconductor Equipment Installation and Qualification**

Junzilan Cheng, John Fowler, Karl Kempf

### ***Statistical Methods***

#### **Virtual Equipment for Benchmarking Predictive Maintenance Algorithms**

Andreas Mattes, Ulrich Schöpka, Peter Scheibelhofer, Günter Leditzky, Martin Schellenberger

#### **Dominance Index for Many-to-many Correlation Analysis and its Application to Semiconductor Yield Analysis**

Amos Hong, Argon Chen

**Treatment of Missing Values for Association Rule-Based Tool Commonality Analysis in Semiconductor Manufacturing**

Rong-Huei Chen, Chih-Min Fan

**Identifying Illed Tool Combinations via Gibbs Sampler for Semiconductor Manufacturing Yield Diagnosis**

Yu-Chin Hsu, Chih-Min Fan, Rong-Huei Chen

**Supply Chain Management Approaches**

**Simulation of a Green Wafer Fab Featuring Solar Photovoltaic Technology and Storage System**

Leann Sanders, Stephanie Lopez, Gregory Guzman, Jesus Jimenez, Tongdan Jin

**An Evaluation of an Option Contract in Semiconductor Supply Chains**

Konstanze Knoblich, Cathal Heavey, Peter Williams

**A Multi-Stage Discrete Event Simulation Approach for Scheduling of Maintenance Activities in a Semiconductor Manufacturing Line**

Wolfgang Scholl, Marcin Mosinski, Boon Ping Gan, Peter Lendermann, Daniel Noack, Patrick Preuss

**Tool Modeling Approaches**

**Single Toolset Simulation Modeling Approaches in Semiconductor Manufacturing**

Kamil Erkan Kabak, Cathal Heavey, Brian Kiernan

**Admission Control for Batch Processes with Downstream Queue Time Constraints**

Cheng-Hung Wu, Yu-Ching Cheng, Ping-Ju Tang, Jiun-Yu Yu

**Improving Cluster Tools Performance Using Colored Petri Nets in Semiconductor Manufacturing**

Dongjin Kim, Emrah Cimren, Robert Heavey, Abbas K. Zaidi

**Tutorial on Central Planning**

**Tutorial: Illusion of Capacity - Challenge of Incorporating the Complexity of FAB Capacity (Tool Deployment & Operating Curve) into Central Planning for Firms with Substantial NON-FAB Complexity**

Kenneth Fordyce, R. John Milne, John Fournier, Harpal Singh

## **Military**

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**Combat Modeling and Mission Analysis**

**An Agent-Based Model of the Battle of Isandlwana**

Chris Scogings, Ken Hawick

**An Approximative Method of Simulating a Duel**

Mikko Pakkanen, Esa Lappi, Bernt Akesson

**Modeling of Canadian Forces' Northern Operations and Their Staging**

Jean-Denis Caron, Yvan Gauthier, Ahmed Ghanmi

**Defense and Security Applications of M&S - Grand Challenges and Current Efforts**

**Defense and Security Applications of M&S - Grand Challenges and Current Efforts**

Andreas Tolk, Nabil R. Adam, Erdal Cayirci, Stefan Pickl, Randall Shumaker, Joseph A. Sullivan, William F. Waite



## ***Military Analysis***

### **Metamodeling of Simulations Consisting of Time Series Inputs and Outputs**

Scott Rosen, Christopher Saunders, Samar Guharay

### **Assessing the Robustness of UAV Assignments**

Enver Yucesan, Yucel Alver, Murat Ozdogan

### **Effective Crowd Control Through Adaptive Evolution of Agent-based Simulation Models**

Nan Hu, James Decraene, Wentong Cai

## ***Military Logistics***

### **Tactical Combat Casualty Care: Strategic Issues of a Serious Simulation Game Development**

Marko Hofmann, Hwa Feron

### **A Location Model for Storage of Emergency Supplies to Respond to Technological Accidents in Bogotá**

Ridley S. Morales Mahecha, Raha Akhavan-Tabatabaei

### **Simulating Tomorrow's Supply Chain Today**

Randolph Bradley, Jarrod Goentzel

## ***Military Simulation Methodologies***

### **ISO and OGC compliant Database Technology for the development of Simulation Object Databases**

Martin Krückhans

### **Effects of Terrain in Computational Methods for Indirect Fire**

Esa Lappi, Mikko Sysikaski, Bernt Åkesson, Ziya Yildirim

### **Effects of Stochastic Traffic Flow Model on Expected System Performance**

John Hyland, Cheryl Smith

## ***NATO Military M&S / Simulation-Enhanced Military Testing***

### **Using Models and Simulations to Enhance Military Testing**

Jeffery Peterson

### **NATO MSG-88 case study results to demonstrate the benefits of using Data Farming for military decision support**

Daniel Kallfass, Tobias Schlaak

### **JCW Environment Development Branch Support for NATO Simulation Activities**

Francis A. Bowers, Amy Grom

## ***Modeling Methodology***

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### ***Beyond Simulation***

#### **Investigating Unexpected Outcomes Through the Application of Statistical Debuggers**

Kelsey Dutton, Ross Gore, Paul Reynolds

#### **Hidden Non-Markovian Reward Models: Virtual Stochastic Sensors for Hybrid Systems**

Claudia Krull, Graham Horton

#### **Reconstructing species-based dynamics from stochastic rule-based models**

Tatjana Petrov, Jerome Feret, Heinz Koeppl

### ***Distributed Computation***

#### **Hardware-in-the-Loop Simulation for Automated Benchmarking of Cloud Infrastructures**

Qi Liu, Marcio Silva, Michael Hines, Dilma Da Silva

**A Model-Driven Method For Building Distributed Simulation Systems from Business Process Models**

Paolo Bocciarelli, Daniele Gianni, Alessandra Pieroni, Andrea D'Ambrogio

**Technical Engine for Democratizing Modeling, Simulations, and Predictions.**

Justyna Zander, Pieter J. Mosterman

**Efficient & Effective Simulation**

**Allocation of Simulation Effort for Neural Network vs. Regression Metamodels**

Corinne MacDonald, Eldon Gunn

**Efficient Simulation of Charge Transport in Deep-Trap Media**

Timothy Brereton, Dirk Kroese, Volker Schmidt, Ole Stenzel, Bjoern Baumeier

**A Time-Based Decomposition Algorithm for Fast Simulation with Mathematical Programming Models**

Arianna Alfieri, Andrea Matta

**MM-Panel & Discussion**

**Panel on Grand Challenges for Modeling & Simulation**

Simon Taylor, Paul Fishwick, Richard Fujimoto, Adelinde Uhrmacher, Ernest Page, Gabriel Wainer

**Modeling Approaches I**

**Modeling and Simulation of Agents and their Environment using Multi-Level-DEVS**

Alexander Steiniger, Frank Krüger, Adelinde Uhrmacher

**Conceptual Modeling with Processes**

Andreas Tolk, Charles D. Turnitsa

**A Compositional Approach for Modeling and Simulation of Bio-Molecular Systems**

Fernando Barros

**Modeling Approaches II**

**Modeling the Minsky Triad: A Framework to Perform Reflexive M&S Studies**

Bruno Bonté, Jean-Pierre Müller, Raphaël Duboz

**Hybrid Simulation of Renewable Energy Generation and Storage Grids**

Peter Bazan, Reinhard German

**Integrating Discrete-Event and Time-Based Models With Optimization for Resource Allocation**

Teresa A. Hubscher-Younger, Pieter J. Mosterman, Seth DeLand, Omar Orqueda, Doug Eastman

**Multi-Agent Systems**

**How to Design Agent-Based Simulation Models Using Agent Learning**

Robert Junges, Franziska Klügl

**User Understanding of Cognitive Processes in Simulation**

David Scerri, Sarah Hickmott, Lin Padgham

**Grid-based partitioning for large-scale distributed agent-based crowd simulation**

Yongwei Wang, Michael Lees, Wentong Cai

**Principles of M&S**

**An Integrated Approach for the Validation of Emergence in Component-based Simulation Models**

Claudia Szabo, Yong Meng Teo

**Semiotics, Entropy, and Interoperability of Simulation Systems – Mathematical Foundations of M&S Standardization**

Andreas Tolk, Saikou Diallo, Jose Padilla

**On Reproducibility and Traceability of Simulations**

Olivier Dalle

## **Network Modeling and Simulation**

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### **Simulation and Performance**

**Analytical Modeling and Simulation of the Energy Consumption of Independent Tasks**

Thomas Rauber, Gudula Rünger

**Validation of Application Behavior on a Virtual Time Integrated Network Emulation Testbed**

Yuhao Zheng, Dong Jin, David Nicol

**Runtime Performance and Virtual Network Control Alternatives in VM-based High-fidelity Network Simulations**

Srikanth Yoganath, Kalyan Perumalla, Brian J. Henz

### **Support for Network Simulation**

**Simulation Visualization of Distributed Communication Systems**

Mihal Brumbulli, Joachim Fischer

**SAFE: Simulation Automation Framework for Experiments**

L. Felipe Perrone, Christopher S. Main, Bryan C. Ward

**Using Network Simulation in Classroom Education**

George Riley

## **New Methods in Manufacturing Simulation**

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### **Emulation and Virtual Ramp-up**

**Embedded Simulation for Automation Of Material Manipulators in A Sputtering PVD Process**

Gerhard Rath, Jürgen Lackner, Wolfgang Waldhauser

**Towards an Integrated Simulation and Virtual Commissioning Environment for Controls of Material Handling Systems**

Stephan Seidel, Ulrich Donath, Jürgen Haufe

**Integration of Emulation Functionality into an Established Simulation Object Library**

Torben Meyer, Carsten Pöge, Gottfried Mayer

### **Manufacturing Simulation and Optimization**

**Simulation and Optimization of Robot Driven Production Systems for Peak-load Reduction**

Sören Lorenz, Anja Fischer, Matthias Hesse

**Fast Converging, Automated Experiment Runs for Material Flow Simulations Using Distributed Computing and Combined Metaheuristics**

Christoph Laroque, Alexander Klaas, Jan-Hendrik Fischer, Mathis Kuntze

**Real-World Simulation-Based Manufacturing Optimization using Cuckoo Search**

Anna Syberfeldt, Simon Lidberg

### **Production Modeling Support**

**Towards Assisted Input and Output Data Analysis in Manufacturing Simulation: The Edasim Approach**

Tjorben Bogon, Ulrich Jessen, Andreas Lattner, Dimitrios Paraskevopoulos, Markus Schmitz, Sven Spieckermann, Ingo Timm, Sigrid Wenzel

**System Modeling in Sysml and System Analysis in Arena**

Ola Batarseh, Leon McGinnis

**Applying Semantic Web Technologies for Efficient Preparation of Simulation Studies in Production and Logistics**

Markus Rabe, Pavel Gocev

**Road and Bridges Simulation**

**Effective Strategies for Simulating One-of-a-Kind Construction Projects**

Simaan AbouRizk, Ronald Ekyalimpa, Jack Farrar

**Construction Operations Simulation under Structural Adequacy Constraints: the Stonecutters Bridge Case Study**

Wah-Ho Chan, Ming Lu

**Simulation of Mobile Falsework Utilization Methods in Bridge Construction**

Hexu Lia, Ming-Fung Francis Siu, Sebastian Hollermann, Ronald Ekyalimpa, Ming Lu, Simaan Abourizk, Hans-Joachim Bargstaedt

**Simulation for Feasibility Assessment**

**Complex Agent Interactions in Operational Simulations for Aerospace Design**

Benjamin Schumann, Jim Scanlan, Hans Fangohr

**Flexible Work Organization in Manufacturing – A Simulation-supported Feasibility Study**

Gert Zülch, Mikko Börkircher

**Simulation for Manufacturing Control Support**

**Simulation-based optimization in make-to-order production: Scheduling for a special-purpose glass manufacturer**

Carsten Ehrenberg, Jürgen Zimmermann

**Using A Scalable Simulation Model to Evaluate the Performance of Production System Segmentation in A Combined MRP and Kanban System**

Thomas Felberbauer, Klaus Altendofer, Alexander Huebl

**Logistics Sensitivity Of Construction Processes**

Julia Katharina Voigtmann, Hans-Joachim Bargstädt

**Standards in Manufacturing Simulation**

**Model generation in SLX using CMSD and XML Stylesheet transformations**

Soeren Bergmann, Soeren Stelzer, Sascha Wuestemann, Steffen Strassburger

**A new web based method for distribution of simulation experiments based on the CMSD standard**

Soeren Bergmann, Soeren Stelzer, Steffen Strassburger

**A Framework For Interoperable Sustainable Manufacturing Process Analysis Applications Development**

Guodong Shao, Frank Riddick, Ju Yeon Lee, Mark Campanelli, Duck Bong Kim, Yung-Tsun Lee

**New Methods in Transport and Logistics Simulation**

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## ***Material Handling Systems***

### **Event Based Recognition and Source Identification of Transient Tailbacks in Manufacturing Plants**

Clemens Schwenke, Thomas Wagner, André Gellrich, Klaus Kabitzsch

### **Semi-Automatic Simulation-Based Bottleneck Detection Approach**

Simeon Rehbein, Marco Lemessi, Thomas Schulze, Gordon Rehn

### **Modeling of Handling Task Sequencing to Improve Crane Control Strategies in Container Terminals**

Jan Kaffka, Uwe Clausen

## ***Simulation and Optimization for MHS***

### **Combining Monte-Carlo Simulation With Heuristics for Solving the Inventory Routing Problem with Stochastic Demands**

José Cáceres-Cruz, Angel Juan, Scott Grasman, Tolga Bektas, Javier Faulin

### **SIM-Randsharp: A Hybrid Algorithm for Solving The ARC Routing Problem with Stochastic Demands**

Sergio González Martín, Angel Juan, Daniel Riera, Mónica Elizondo, Pau Fonseca

### **A Simulation-Based Optimization Heuristic Using Self-Organization for Complex Assembly Lines**

Evangelos Angelidis, Daniel Bohn, Oliver Rose

## ***Simulation for Sustainable Logistics***

### **An approach of methods for increasing flexibility in green supply chains driven by simulation**

Markus Rabe, Sven Spieckermann, Adrienn Horvath, Till Fechteler

### **Intra-Simulative Ecological Assessment of Logistics Networks: Benefits, Concepts, and Tool Enhancement**

Jan Cirullies, Michael Toth, Christian Schwede

### **Supply Chain Carbon Footprint Tradeoffs Using Simulation**

Sanjay Jain, Erik Lindskog, Bjorn Johansson

## ***Simulation in Three Dimensions***

### **Assessment Methodology for Validation of Vehicle Dynamics Simulations Using Double Lane Change Maneuver**

Emir Kutluay, Hermann Winner

### **Combining Point Cloud Technologies with Discrete Event Simulation**

Erik Lindskog, Jonatan Berglund, Johan Vallhagen, Rolf Berlin, Björn Johansson

### **Automatic Collision Free Path Planning in Hybrid Triangle and Point Models**

Sebastian Tafuri, Evan Shellshear, Robert Bohlin, Johan S. Carlson

## ***Simulation of Supply Chains***

### **A Simulation-Based Approach to Capturing Autocorrelated Demand Parameter Uncertainty in Inventory Management**

Alp Akcay, Bahar Biller, Sridhar Tayur

### **Cloud Computing Architecture For Supply Chain Network Simulation**

Manuel Rossetti, Yaohua Chen

## ***Transport Networks***

**Modeling the global freight transportation system: A multi-level modeling perspective** &

Ronald Halim, Lorant Tavasszy, Mamadou Seck

**Statistical modelling of delays in a rail freight transportation network** (%)

Janos Barta, Andrea Emilio Rizzoli, Matteo Salani, Luca Maria Gambardella

**Simulation Backbone for Gaming Simulation in Railways: A Case Study** (%) +

Dick Middelkoop, Sebastiaan Meijer, Joris Steneker, Emdzad Sehic, Maura Mazzarello

## **Performance Issues of Simulation Software**

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### **Performance Issues in Parallel and Distributed Simulation**

**Using DVFS to Optimize Time Warp Simulations** (%) + \$

Ryan Child, Philip Wilsey

**Assessing Load-Sharing within Optimistic Simulation Platforms** (%) &

Roberto Vitali, Alessandro Pellegrini, Francesco Quaglia

**Model-driven Performance Prediction of HLA-Based Distributed Simulation Systems** (%) -

Daniele Gianni, Paolo Bocciarelli, Andrea D'Ambrogio

### **Performance Issues of Simulation Software**

**The Shortest Path: Comparison of Different Approaches and Implementations for the Automatic Routing of Vehicles** & \$ +

Kai Gutenschwager, Axel Radtke, Georg Zeller, Sven Völker

**Optimal Computing Budget Allocation in a Small Budget Environment** (%) & -

G. LaPorte, Juergen Branke, Chun-Hung Chen

**Refactoring and Automated Performance Tuning of Computational Chemistry Application Codes** & ' &

Shirley V. Moore

## **Petri Nets, Simulation and Applications**

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### **Colored Petri Nets**

**A Machine Learning Approach for Generating Temporal Logic Classifications of Complex Model Behaviours** (%) & ( %

Daniele Maccagnola, Enza Messina, Qian Gao, David Gilbert

**An Efficient Method for Unfolding Colored Petri Nets** (%) & ) ' &

Fei Liu, Monika Heiner, Ming Yang

**Efficient simulation of Stochastic Well-Formed Nets through symmetry exploitation** (%) & \* )

Giuliana Franceschinis, Marco Beccuti

**5 'A cXi `Y! VUgYX `5ddf cUW `hc `6]ca cXY `9b[ ]bYYf]b[ `k ]h `DYhf] BYhg** (%) & +, &

Wolfgang Marwan, Mary Ann Blätke

### **Modeling and Simulation by Hybrid Petri Nets**

**HPN modeling, Optimization and Control Law Extraction for Continuous Steel Processing Lines** (%) & - \$

Eiji Konaka, Tatsuya Suzuki, Kazuya Asano, Yoshitsugu Iijima

**Modeling and Simulation by Hybrid Petri Nets** (%) ' \$ &

Hassane Alla, Latéfa Ghomri

**A New Object-Oriented Petri Net Simulation Environment Based On Modelica**

Sabrina Proß, Sebastian Jan Janowski, Bernhard Bachmann, Ralf Hofestädt

**Non-Markovian Stochastic Petri Nets**

**On Simulation of Non-Markovian Stochastic Petri Nets with Heavy-Tailed Firing Times**

Peter Glynn, Peter Haas, Pierre Dersin, Rene C. Valenzuela

**Investigating Coupling Patterns in State-Space Models for System Reliability**

Vitali Volovoi

**Application of Non-Markovian Stochastic Petri Nets to the Modeling of Rail System Maintenance and Availability**

Pierre Dersin, Rene C. Valenzuela

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## PhD Colloquium

### *Doctoral presentations I*

**Integrating Discrete Event Simulation and System Dynamics on Single Platform for Simulating Construction Operations**

Hani Alzraiee, Osama Moselhi, Tarek Zayed

**Database-Driven Distributed 3D Simulation**

Martin Hoppen

**Modeling and Simulation of Agents and their Environment using Multi-Level-DEVS**

Alexander Steiniger

**GUISE - a tool for GUIDing Simulation Experiments**

Stefan Leye, Adelinde M. Uhrmacher

**A new web based method for distribution of simulation experiments based on the CMSD standard**

Soeren Bergmann

**A Forthcoming Useful Tool: Enhancing Understanding of Models through Analysis**

Kara A. Olson

**Network Optimization prior to Dynamic Simulation of AMHS**

Christian Hammel

### *Doctoral presentations II*

**Optimizing Assembly Line Supply by Integrating Warehouse Picking and Forklift Routing Using Simulation**

Stefan Vonolfen, Monika Kofler, Andreas Beham, Michael Affenzeller, Werner Achleitner

**New Control Variates for Levy Process Models**

Kemal Dincer Dinceç, Wolfgang Hörmann

**A Simulation-Based Approach to Capturing Autocorrelated Demand Parameter Uncertainty in Inventory Management**

Alp E. Akcay

**A New Approach to Unbiased Estimation for SDE's**

Chang-han Rhee

**A Hybrid Simulation Framework to Assess The Impact of Renewable Generators on a Distribution Network**

Fanny Anne Boulaire

**Time Buffer for Approximate Optimization of Production Systems: Concept, Applications and Structural Results**

Giulia Pedrielli

**Simulation-Based Analysis of the Bullwhip Effect Under Classical and Information Sharing Ordering Policies**

Ahmed Shaban

**Doctoral presentations III**

**Simulation With Data Scarcity: Developing A Simulation Model of A Hospital Emergency Department**

Yong-Hong Kuo, Janny M.Y. Leung, Colin A. Graham

**Optimization via Gradient Oriented Polar Random Search**

Haobin Li

**A Framework to Schedule Surgeries in an Eye Hospital**

Hanna Ewen, Lars Mönch

**Combining Monte-Carlo Simulation with Heuristics for Solving the Inventory Routing Problem with Stochastic Demands**

Jose Caceres-Cruz

**Generation Of Alternatives for Model Predictive Control in Manufacturing Systems**

Soeren Stelzer

**Hybrid Method for Task Scheduling in A Distribution Center**

David Ciprés, Carlos Millán, Ander Errasti

**Analysis of Market Returns Using Multifractal Time Series and Agent-Based Simulation**

James R. Thompson, James R. Wilson

**Doctoral presentations IV**

**A Comparative Analysis of Decentralized Power Grid Stabilization Strategies**

Arnd Hartmanns

**mosaik - Scalable Smart Grid Scenario Specification**

Steffen Schütte

**Autocorrelation Effects In Manufacturing Systems Performance: A Simulation Analysis**

Diego Crespo Pereira

**Using Discrete-Event Simulation to analyze the process of cataract intervention at a university hospital outpatient department**

Olav Goetz

**Simulation-based optimization in make-to-order production: Scheduling for a special-purpose glass manufacturer**

Carsten Ehrenberg

**Ranking and Selection with Unknown Correlation Structures**

Huashuai Qu

**DDAS-Based Multi-Scale Framework For Pedestrian Behavior Modeling and Interactions with Drivers**

Hui Xi

**Seven pitfalls in modeling and simulation research**

**Seven pitfalls in modeling and simulation research**

Adelinde Uhrmacher



## Plenary Talks

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### **Keynote on "Climate Change - State of the Science" by Stefan Rahmstorf**

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Stefan Rahmstorf

### **Keynote on "The Propagation Approach for Computing Biochemical Reaction Networks" by Thomas Henzinger**

Keynote by Thomas Henzinger

Thomas Henzinger

### **Titans Talk on "Modeling and Simulation of Complex Systems: are Petri nets useful?" by Gianfranco Balbo**

Titans Talk by Gianfranco Balbo

Gianfranco Balbo

## Poster

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### **Poster Madness: Analysis Methods and Applications**

Optimization via Gradient Oriented Polar Random Search

Haobin Li

Combining Monte-Carlo Simulation With Heuristics For Solving the Inventory Routing Problem with Stochastic Demands

Jose Caceres-Cruz

New Control Variates for Levy Process Models

Kemal Dincer Dinceç, Wolfgang Hörmann

A Simulation-Based Approach to Capturing Autocorrelated Demand Parameter Uncertainty in Inventory Management

Alp E. Akcay

Analysis Of Market Returns Using Multifractal Time Series and Agent-Based Simulation

James R. Thompson, James R. Wilson

Time Buffer for Approximate Optimization of Production Systems: Concept, Applications and Structural Results

Giulia Pedrielli

Simulation-Based Analysis of the Bullwhip Effect Under Classical and Information Sharing Ordering Policies

Ahmed Shaban

A Forthcoming Useful Tool: Enhancing Understanding of Models through Analysis

Kara A. Olson

Ranking and Selection with Unknown Correlation Structures

Huashuai Qu

Using Simulation and Rough Set Learning to Detect Fault Location in Distribution Network

Wei Wu, Feng Jin

Design and Application of Data Interchange Formats (DIFs) for Improving Interoperability in SBA

Hwang Ho Kim

Analysing LTL Terminal Performance by combining Simulation and Statistics

Viktoria Sander, Sonja Kuhnt, Uwe Clausen, Jan Kaffka

**A Simulation-Based Approach to Statistical Inventory Control**

Alp E. Akcay

**A New Approach to Unbiased Estimation for SDE's**

Chang-han Rhee

**Testing Stochastic Order for Reliability Analysis of Complex Systems**

Demet Batur, Fred Choobineh

**Hybrid Simulation for Conditional Estimators Over an Infinite Interval**

Chia-Li Wang, Ronald W. Wolff

**Metamodel Variability Analysis Combining Bootstrapping and Validation Techniques**

Gabriella Dellino, Carlo Meloni

**General Simulation Model to Improve the Design and Operation of Cross-Docking Systems**

Halston R. Hales, Allen G. Greenwood

**A Simulation Approach for an (R,Q) Inventory Model with A Deteriorating Item, Poisson Demand and Stochastic Lead Time**

S. Golshid Sharifnia, S. Mehdi Sajadifar, Mohammadmahdi Alizadeh

**Optimization Principles for Arithmetic Functions in Hardware-Software Co-Design**

Stephan Eidenbenz, Vladimir Delengov, Yuan Li, Nandakishore Santhi, Jennifer Thompson, Lukas Kroc

**Classification of Simulation-Optimization Methods**

Gonçalo Figueira, Bernardo Almada-Lobo

***Poster Madness: Manufacturing and Logistics***

**Optimizing Assembly Line Supply by Integrating Warehouse Picking and Forklift Routing Using Simulation**

Stefan Vonolfen, Monika Kofler, Andreas Beham, Michael Affenzeller, Werner Achleitner

**Generation of Alternatives for Model Predictive Control in Manufacturing Systems**

Soeren Stelzer

**A new web based method for distribution of simulation experiments based on the CMSD standard**

Soeren Bergmann

**Hybrid Method for Task Scheduling in A Distribution Center**

David Ciprés, Carlos Millán, Ander Errasti

**A Simulation-Based Approach for Obtaining Optimal Order Quantities of Short-Expiration Date Items at A Retail Store**

Haixia Sang

**A Hybrid Simulation Framework to Assess The Impact Of Renewable Generators on A Distribution Network**

Fanny Anne Boulaire

**Simulation-based optimization in make-to-order production: Scheduling for a special-purpose glass manufacturer**

Carsten Ehrenberg

**Network Optimization prior to Dynamic Simulation of AMHS**

Christian Hammel

**Facilitating Emulation Project Analysis through the use of Protocol State Machines**

Torben Meyer, Steffen Straßburger

**Object-Oriented oil refinery simulation for fast and accurate investment assessment**

Daniel Barry Fuller, Virgilio Jose Ferreira Filho, Claudio Limoeiro

**A Petri Net Based Method for the Early Verification & Validation of A Simulation Study in Construction Management**

Kais Samkari, Volkhard Franz

**Material Flow Simulation for Process Development at a Telecommunication's Factory in the Amazon Region**

Eduardo Quaglia, Hélio Montenegro, Dalton Soares

**A Tool for Analyzing Picking Operations within A Distribution Center**

Bruno Santini, João Filho, Leonardo Chwif, Jerry Banks

**Combining Biased Randomization with Meta-Heuristics For Solving the Multi-Depot Vehicle Routing Problem**

Angel Juan, Mariana Coccola, Javier Faulin, Barry Barrios, Tolga Bektas, Sergio Gonzalez-Martin

**Integrating Discrete Event Simulation and System Dynamics on Single Platform to Simulate Construction Operations**

Hani Alzraiee, Osama Moselhi, Tarek Zayed

**Simulation-Based Optimization for Semiconductor Manufacturing using Hyper-Heuristics**

Tobias Uhlig, Oliver Rose, Falk Pappert

**Evaluation of Lot Release Policies for Cycle Time Improvement in Semiconductor Manufacturing Systems: A Petri Net Approach**

Laura Oyuela Eslava, Raha Akhavan-Tabatabaei

**Efficient Design of Experiments for Model Predictive Control of Manufacturing Systems**

Soeren Stelzer

**X10-based Large Scale Traffic Simulation Platform**

Toyotaro Suzumura, Hiroki Kanezashi

**Simulation with Sustainability Aspects in the Manufacturing System Concept Phase**

Juhani Heilala, Pablo Bermell-Garcia, Marja Paju, Janne Kiirikki, Jari Montonen, Reino Ruusu, Simon Astwood, Kiran Krishnamurthy, Santiago Quintana

**Autocorrelation Effects In Manufacturing Systems Performance: A Simulation Analysis**

Diego Crespo Pereira, David del Rio Vilas, Nadia Rego Monteil, Rosa Rios Prado, Alejandro Garcia del Valle

**SIMchronization: A Method Supporting the Synchronisation of Information and Material Flows**

Christoph Stephan Prackwieser

**Range Estimation for Electric Vehicles**

Michael Ahlborn, Christian Vetter, Oliver Zirn, Raul Heyne

***Poster Madness: Modeling Methods and Applications***

**Modeling and Simulation of Agents and their Environment using Multi-Level-DEVS**

Alexander Steiniger

**GPU-Based Simulation of Wireless Body Sensor Networks**

Dion Paul, Hongmei Chi

**Using Simulation to Forecast the Demand for Hospital Emergency Services at the Regional Level**

Bozena Mielczarek, Justyna Uzialko-Mydlikowska

**A Decision Support System for Hospital Emergency Departments designed using Agent-Based techniques**

Manel Taboada, Eduardo Cabrera, Emilio Luque, Francisco Epelde, Maria Iglesias

**Using Agent-based Simulation to Understand Cooperation in Business Organizational Settings**

Claudia Ribeiro, José Borbinha, José Tribolet, João Pereira

**Using Discrete-Event Simulation to analyze the process of cataract intervention at a university hospital outpatient department**

Olav Goetz

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