

48th Annual Simulation Symposium

(ANSS 2015)

2015 Spring Simulation Multi-Conference (SpringSim'15)

Simulation Series Volume 47 Number 2

**Alexandria, Virginia, USA
12 – 15 April 2015**

Editors:

**A. Tolk
S. Jafer**

J. J. Padilla

ISBN: 978-1-5108-0099-1

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571
www.proceedings.com



Some format issues inherent in the e-media version may also appear in this print version.

© 2015 SIMULATION COUNCILS, INC.

Responsibility for the accuracy of all statement in each paper rests solely with the author(s). Statements are not necessarily representative of, nor endorsed by, The Society for Modeling and Simulation International.

Printed by Curran Associates, Inc. (2015)

Permission is granted to photocopy portions of this publication for personal use and for the use of students provided credit is given to the conference and publication. Permission does not extend to other types of reproduction nor to copying for incorporation into commercial advertising nor for any other profit-making purpose. Other publications are encouraged to include 300- to 500-word abstracts or excerpts from any paper contained in this book, provided credits are given to the author and the conference. For permission to publish a complete paper write: The Society for Modeling and Simulation International (SCS), 2598 Fortune Way, Suite I, San Diego, CA 92081, USA.

Additional copies of the Proceedings are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571
curran@proceedings.com
www.proceedings.com/0128.html

or

The Society for Modeling
and Simulation International
2598 Fortune Way, Ste I
Vista, CA 92081 USA
www.scs.org

ISBN: 978-1-5108-0099-1
PRINTED IN THE UNITED STATES

TABLE OF CONTENTS

Assessing Personality Traits of Simulation-based Training Scenario Developers.....	1
<i>S. Lackey, C. Maraj, J. Salcedo</i>	
A Tool For Model Conversion Between Simulators Of Grid Computing.....	9
<i>G. Furlanetto, R. Lobato, R. Stabile, D. Menezes, A. Manacero, R. Spolon</i>	
Simulation Visualization Issues for Users and Customers	17
<i>A. Collins, D. Knowles-Ball, J. Romberger</i>	
Calculating Grid Partitioning Costs of Distributed Virtual World Simulation Systems.....	25
<i>W. Rivera, A. Goel, W. Karwowski, P. Kincaid</i>	
Effective Visualization in Modeling & Simulation.....	33
<i>D. Vernon-Bido, A. Collins, J. Sokolowski</i>	
An Exploration of Fault Tree Analysis Methods for Military Simulations.....	41
<i>J. Hanes, J. Fay</i>	
Asynchronous Optimization Techniques for Distributed Computing Applications	49
<i>R. Reisch, J. Weber, C. Schroder, C. Laroque</i>	
MOE Quantification of Missions using Sensor Data Driven Graph Similarity Metrics.....	57
<i>B. Madan, D. Bein</i>	
Bayesian Changepoint Detection for Generic Adaptive Simulation Algorithms.....	62
<i>T. Helms, O. Reinhardt, A. Uhrmacher</i>	
An Investigation of 'Soft' Operations Research Methods to Inform Hybrid Simulation Studies on Environmental Disasters	70
<i>A. Wienke, N. Mustafee</i>	
Investigating Execution Strategies for Hybrid Models developed using Multiple M&S Methodologies.....	78
<i>N. Mustafee, P. Godsiff, M. Sahnoun, D. Baudry, A. Smart, A. Louis</i>	
Merging Worlds: Complex Adaptive Systems Science Meets Systems Engineering—A Foundation for Complex Adaptive Agent-Based Modeling Architectures.....	86
<i>M. Doyle, E. Watz, A. Portrey</i>	
Agent-based System for Simulating the Dynamics of Social Identity Beliefs.....	94
<i>M. Upal, S. Gibbon</i>	
The Evaluation of a Constructive Modeling and Simulation Approach in Teaching Port Management Skills.....	102
<i>M. Balaban, S. Russell, T. Mastaglio, P. Dykes</i>	
Integrating Simulation-Driven Decisions and Business Wargames to Shape Fiscal Policies.....	111
<i>A. Hernandez</i>	
Generating Domain-Specific Simulation Environments from SMP2-based Model Frameworks for Rapid Development of Simulation Applications	119
<i>N. Zhu, J. Yao, Y. Lei, S. Mei, Y. Zhu</i>	
The Multi-Craft Problem: A Distributed Simulation Approach Using Networked Floating Objects	124
<i>A. Zubayer, D. Peters, B. Veitch</i>	
Estimating the Probability of a Timely Traffic-HazardWarning via Simulation.....	130
<i>N. Mullner, M. Franzle, S. Froschle</i>	
An Adaptive Fault-tolerance Scheme for Distributed Load Balancing Systems	138
<i>D. Liu, R. Grande, A. Boukerche</i>	
Universal Simulation Engine (USE): A Model-Independent Library for Discrete Event Simulation	146
<i>D. Fu, M. Becker, H. Szczerbicka</i>	
Model-Based Configuration of Automotive Co-Simulation Scenarios	155
<i>M. Krammer, J. Fritz, M. Karner</i>	
Adaptively Perturbing Localized State Space in Data Assimilation of Wildfire Spread Simulation.....	163
<i>F. Gu</i>	
Particle Filter Based Traffic Data Assimilation with Sensor Informed Proposal Distribution	173
<i>P. Wu, H. Xue, X. Hu</i>	
A Domainin Ontology for Ballistic Missile Defense Conceptual Model	181
<i>W. Wang, F. Yang, W. Ma, X. Li, Y. Wu</i>	
Accelerated Portfolio Optimization With Conditional Value-at-Risk Constraints Using A Cutting-Plane Method	188
<i>G. Hofmann</i>	

A Comparison of a Generic MCMC-Based Algorithm for Bayesian Estimation in C++, R and Julia.	
Application to Plant Growth Modeling.....	194
<i>G. Viaud, P. Cournede, Y. Chen, B. Bayol</i>	
Paradigms for Conceptual Modeling	202
<i>R. Roca, D. Pace, S. Robinson, A. Tolk, L. Yilmaz</i>	
Author Index	