

# 2005 SPRING SIMULATION MULTICONFERENCE OFFICIAL CALL FOR PAPERS

(FORMERLY THE ADVANCED SIMULATION TECHNOLOGY CONFERENCE (ASTC))

## BUSINESS AND INDUSTRY SYMPOSIUM

The Business and Industry Symposium is devoted to encourage international collaborative research, development, and innovation in numerical simulation and optimization as applied to business and industry. The goal is to stimulate the development and use of simulation technologies in specific areas of computer modeling and simulation. This goal will promote the exchange of ideas and information between academia, government, and industry, thereby supporting the development of simulation and its applications to meet current scientific and technical challenges. Abstracts for original papers are solicited in the following areas:

### Business Track

- Economic Systems
- Financial Systems
- Management Systems
- Market Optimization
- Operations Research
- Intelligent Management Systems
- Dynamic Business Process Optimization
- Decision Analysis
- Regulatory Simulation

### Industry Track

- Manufacturing Plants and Systems
- Environmental Sciences and Applications
- Ground Water Technology
- Nuclear and Chemical Waste Processing Technology
- Process Flowsheet Modeling
- Power Plant Simulators

- Material Sciences and Applications
- Genetic Programming
- Industrial Engineering
- Systems Optimization
- Neural Networks / Fuzzy Logic
- Systems and Process Simulation
- Transportation Systems
- Automotive Simulation Applications
- Human Factor Engineering
- Knowledge and Data Systems
- Complexity Theory
- Statistical Modeling
- Machine Learning
- Robotics
- Decision Support Systems
- Mathematical Algorithms/Methodologies
- Global Optimization
- Parallel Computing

### Virtual Reality Track

- Virtual Reality
- Augmented Reality
- Motion Capture
- Real-time Computer Simulation and Realistic Sensation
- Tactile Displays and Haptic Interfaces in VR
- Interaction and Navigation in Industrial VR
- Intelligent CAD
- Modeling VR Systems
- Distributed VR Systems
- Evaluation of VR Devices, Techniques, and Systems

**Abstract/Draft Paper Submission Deadline is September 17, 2004**

Please submit abstracts/papers for consideration to Dr. Maurice J. Ades. More information is available at <http://www.scs.org/>

**General Chair**  
**Maurice J. Ades**

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**Program Chair**  
**Thong Hang**

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## 38TH ANNUAL SIMULATION SYMPOSIUM

The Annual Simulation Symposium is a forum for the exchange of ideas, techniques, and applications among practitioners of simulation in industry, government, and academia. This international symposium is the oldest continuously operating conference/symposium dedicated to simulation. The paper sessions are designed to promote discussion of concepts, tools, methodologies, and results between authors and the audience. The structure of the symposium also provides for a degree of collegiality and continuity in the discussions of the various topics presented during the week. Original contribution in all areas of modeling and simulation are welcome. This year's symposium is particularly seeking papers in the following topical areas:

- Object-Oriented Simulation
- Simulation Languages, Tools, and Environments
- VLSI Circuit Simulators
- Simulation of Multiprocessor Architectures
- Simulation of Distributed Systems and Databases
- Simulation of Parallel Processing Systems
- Simulation-based Performance Analysis
- Network Modeling and Simulation
- Simulation of Sensor Networks
- Simulation of Wireless and Mobile Networking and Computing
- Simulation of Large Scale Systems
- Simulation of Clusters and Grids
- Simulation of Client-Server Systems
- Simulation of Wireless Systems
- Pervasive Computing
- Smart Network Design and Traffic Modeling
- Routing and Mobility Management in Networks
- Wearable Computer Systems

- Mobile and Nomadic Computing
- Energy-aware Schemes for Wireless Networks
- Simulation of Real-time Systems
- Parallel and Distributed Simulation
- Simulation of Agent Systems
- Simulation-based Software Performance
- Reliability and Maintenance Models
- Simulation of Multimedia Applications and Systems
- Artificial Intelligence in Simulation
- Neural Network Models and Simulation
- Web-based Modeling and Simulation
- Animations/Virtual Reality
- Advances in Simulation Methodology and Practices
- Experimental Design
- Meta-modeling
- Statistical Analysis and Inference
- Verification and Validation
- Selection and comparison procedures

It is strongly recommended that papers be submitted to the Program Chair by electronic mail ( [karatza@csd.auth.gr](mailto:karatza@csd.auth.gr) ). All submissions will be fully refereed for accuracy, technical content, and relevance. Papers should be NO longer than 25 double-spaced pages. Please include full name, affiliation, address, phone number, and email address of each author and designate the author who is to be contacted. Authors will receive the reviewers' comments and will be given a chance to respond to these reviews. Authors' replies will be taken into consideration in the final paper selection decision. Accepted papers will appear in the Symposium's Proceedings which will be published by the IEEE Computer Society. Authors of top papers will also be encouraged to submit a follow-on paper for publication in SCS journals. Only papers that have not been previously published or presented should be submitted. Authors must obtain employer, client, or government releases prior to submitting the final manuscript. For additional information, please contact or send mail to Prof. Helen Karatza ([karatza@csd.auth.gr](mailto:karatza@csd.auth.gr)). Updated conference announcements and information accessible at the symposium home page at: <http://agent.csd.auth.gr/~karatza/ANSS38>.

**Paper Submission Deadline is October 15, 2004**

**General Chair**  
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**Program Chair**  
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## MILITARY, GOVERNMENT, AND AEROSPACE SIMULATION

Next year's symposium on military, government and aerospace simulation will continue a series of annual spring symposiums devoted to the full breadth of simulation in the arenas of military, government, and aerospace. This symposium, like the others in the Spring Simulation Multiconference, is a place for networking, discussions, and exchange of information with colleagues in your field and in other related fields. It also provides an international forum for acquiring unpublished public information on the latest technologies. Topic areas include, but are not limited to:

- Homeland Defense
- Force Protection
- Consequence Management
- Counterforce Operations
- Intelligent Agents
- Human Performance Modeling
- Visualization & Virtual Reality
- C4I Simulation
- Embedded Training
- Avionics / Flight Control Simulation & Visualization
- Battle Field / Battle Theater Simulation
- DIS/DIS++/SISO
- High-level Architecture (HLA)
- Ballistics & Propellant Simulation
- Impact and Penetration Modeling

- Computational Fluid Dynamics (CFD)
- Molecular Dynamics Modeling
- Structural Mechanics Modeling
- Solid Mechanics Modeling
- Flight Simulation & Methodologies
- Lethality, Vulnerability & Survivability
- Mission Planning & Rehearsal
- Simulation & Control of Spacecraft
- Intelligent Systems Simulation
- Computer Generated Forces
- Synthetic Natural Environment
- Agent-based Combat Modeling
- Information Warfare Modeling
- Simulation Based Acquisition
- Grand Challenge Problems

**Abstract/Draft Paper Submission Deadline is November 30, 2004**

Information for full paper and abstract submission will be on-line at: <http://www.scs.org/>

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**Program Chair**  
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## AGENT-DIRECTED SIMULATION

The purpose of this symposium is to facilitate dissemination of the most recent advancements in the theory, methodology, application, and toolkits of agent-directed simulation. Developments in theory and methodology are expected to boost opportunities for previously unforeseen application domains. As the envelope of theory, methodology, and infrastructures increases, so does the perimeter of ambitious agent-based projects. To this end, this symposium is devoted to emergent agent theories, methodologies, and environments that can facilitate analysis, design, and implementation of agent-directed simulations for various application areas such as military, business, engineering, human and social dynamics, ecosystems, etc. Abstracts for technical and position papers are solicited. Topics include, but are not limited to, the following areas:

- Theory:**
- Agent-based computational organization theory
  - Agent-based simulation of anticipatory systems
  - Agent simulation architectures
  - Cooperative autonomy and coalitions
  - Deliberative, interpretive, and social agents
  - Formal models of agents and agent societies
  - Holonic agent systems
  - Models of competition, cooperation, and negotiation

- Methodology:**
- Agent-based simulation software engineering
  - Agents in support of simulation methodologies
  - Computational autonomy
  - Control of agent-based systems
  - Design and validation of agent simulations
  - Emergent law discovery in agent simulations
  - Human behavior modeling and simulation
  - Simulation of behavioral self-organization

- Applications:**
- Business, commerce, transportation
  - Computational biology
  - Computational economics, finance, and politics
  - Ecosystems, environment, and urban planning
  - Engineering and manufacturing
  - Human and social dynamics
  - Military simulation

- Tools, Toolkits, and Environments:**
- Agent modeling tools and simulation engines
  - Agent simulation programming languages
  - Agent simulation verification, validation, testing tools
  - CASE tools for agent-based simulations
  - Distributed simulation for multi-agent systems
  - Standard APIs for agent simulation programming

Prospective authors are invited to submit position or technical papers describing their work and achievements to ADS'05. Please see <http://www.eng.auburn.edu/SCS-TM/ADS-2005.htm> for author instructions

**General Chair**  
**Levent Yilmaz**  
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**E-mail: [yilmaz@eng.auburn.edu](mailto:yilmaz@eng.auburn.edu)**

**Key Dates:**  
**Abstracts/Draft Paper Notification of acceptance Full Camera-ready papers ADS '05 Symposium**  
**October 31, 2004**  
**November 30, 2004**  
**January 11, 2005**  
**April 2-8, 2005**

## APPLIED TELECOMMUNICATION SYMPOSIUM (ATS)

### "Modeling and Simulation Challenges in Telecommunication Systems"

The Applied Telecommunication Symposium (ATS) is an international forum for exchange of technical knowledge and presentation of original papers on the analysis of telecommunication systems and technologies. It is intended for professionals, engineers, software developers, managers, and others interested in cellular and packet traffic characteristics, analysis of telecommunication networks, and practitioners operating telecommunication networks. We are looking for innovative technical papers describing projects, applications, and research and development work pertinent to telecommunication. The following tracks (with □):

#### Wireless

- Chair: Hassan Rajaei, Bowling Green State University, USA  
Co-chair: Axel Lehmann, Universitaet der Bundeswehr Muenchen, Germany
- UMTS
  - GSM / CDMA
  - 2.5G/3G Wireless
  - Mobile Internet and Wireless Multimedia
  - Cell Traffic
  - Network Performance and Engineering
  - Measurements
  - SPECIAL SESSION ON WLAN RESEARCH with particular emphasis on QoS, routing, reliability, overload/congestion control, and interworking with 2.5/3G systems.

#### Network Security and Management

- Chair: Susan Lincke-Salecker, University of Wisconsin-Parkside, USA  
Co-chair: John Laskar, Mitretek Systems, USA
- Innovative Network Security methods
  - WLAN Security
  - Influence of security measures on network performance
  - Operations, Administration, Maintenance
  - Overload/congestion control
  - Load balancing

#### Networks and Multimedia

- Chair: Aftab Ahmad, Norfolk State University, USA  
Co-chair: Wolfgang Haidegger, Siemens, Austria
- Internet QoS Architectures
  - Network performance - analysis and simulation
  - Traffic characterization
  - Packet switch architecture evaluation

#### Telecommunications Business and Regulation

- Chair: George Kraft, Stuart School of Business, Illinois Institute of Technology, USA
- Cost modeling
  - Call center operations
  - Billing models
  - E-commerce

#### Modeling Techniques and V&V

- Chair: Axel Lehmann, Universitaet der Bundeswehr Muenchen, Germany  
Co-chair: Shakil Akhtar, UAE University, Al-Ain, United Arab Emirates
- Simulation techniques
  - Acceleration methods
  - Distributed Simulation
  - Simulation Tools for Modeling and V & V traffic measurements, analysis and synthesis
  - Combined simulation/analytic procedures
  - Metro area design and modeling

#### Traffic Engineering with Protocols and Devices

- Chair: Junaid Zubairi, SUNY at Fredonia, USA  
Co-chair: Chia J. Liu, AT&T Labs, USA
- Traffic Management and control
  - Traffic engineering architectures
  - Bandwidth management
  - GMPLS
  - VPN (Virtual Private Network) Performance Issues

**Draft Paper or Extended Abstract Submission Deadline is November 1, 2004**

Please indicate in the abstract for which track(s) you wish to have your paper considered; note that the final track selection will be at the discretion of the ATS organizers. The abstract must include the author(s), e-mail address(es), and affiliation. Further information is available at: <http://www.scs.org/>

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## HIGH PERFORMANCE COMPUTING SYMPOSIUM

### Grand Challenges in Computer Simulation

The 2005 Spring Simulation Multiconference (SMC 2005) will feature High Performance Computing Symposium (HPC) 2005, the 13th special symposium devoted to the impact of high performance computing and communications on computer simulations.

Advances in networking, high-end computers, large data stores, and middleware capabilities are ushering in a new era of high-performance parallel and distributed simulations. However, along with these opportunities come new challenges. The goal of the 2005 High Performance Computing Symposium is to encourage innovation in high performance computing and communication technologies and to stimulate the use of these technologies in key areas of computer simulation. It will promote the exchange of ideas and information between universities, industry, and national laboratories through the development of high performance computing and communication applications which, in turn, can provide solutions to current scientific and technical challenges. Broad areas of interest include:

- High Performance Applications
- Distributed and Grid Computing
- Visualization and Data-Management
- Problem Solving Environments
- Parallel Algorithms and Architectures

Prospective authors are invited to submit full papers (up to 6 pages in length) on topics related to the areas listed above. Submissions will be evaluated on relevance, technical quality, and exposition. Papers must not have appeared before (or be pending) in a journal or conference with published proceedings, nor may they be under review or submitted to another forum during the HPC 2005 review process. All accepted papers will be published in the proceedings as regular papers. Papers should be submitted electronically (Word, PDF, or PostScript format) with the authors' complete addresses, phone, fax, and e-mail for consideration, and should use the SCS (<http://www.scs.org>) format. It is expected that accepted papers will be presented at the symposium by one of the authors.

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**Full Paper Submission Deadline is October 15, 2004**

More information can be found at <http://www.caip.rutgers.edu/hpc2005/>

## DESIGN, ANALYSIS, AND SIMULATION OF DISTRIBUTED SYSTEMS

Design, Analysis, and Simulation of Distributed Systems is devoted to all kinds of distributed and Internet-based systems. The main topics include, but are not limited to:

- Distributed Systems
- Petri Nets and Other Models
- User Interfaces and Cooperative Systems
- Efficient Distributed Simulation
- Performance Evaluation
- Self-organization and Adaption
- Web Computing and Informational Retrieval
- Distributed Simulation of Intelligent Systems

The goal of the conference is to encourage innovation in design, analysis, and simulation of distributed systems. This includes new technologies as well as new methodologies, new concepts, and experience reports. DASD 2005 will promote a high-quality exchange of ideas and information between universities, industry, and national laboratories supporting the development in the design, analysis, and simulation area of next-generation distributed systems that can provide solutions to current scientific and technological challenges.

All prospective authors are invited to submit full papers of up to 10 pages (single spaced, 12pt) describing their (previously unpublished) work and achievements to DASD 2005. All submitted papers will be subject to a peer-reviewing process by three program committee members. Please submit papers in Word, PDF, or PostScript with the authors' complete addresses, phone, fax, and e-mail for consideration.

**More information about DASD 2005 and the Society for Modeling and Simulation can be found on the conference web page at: <http://www.teo.informatik.uni-rostock.de/DASD>**

**Full Paper Submission Deadline is October 31, 2004**

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## DEVS INTEGRATIVE M&S SYMPOSIUM

The DEVS Symposium provides a forum for scientists and professionals to discuss recent developments in the theory and applications of DEVS-based modeling and simulation. It is also provides an opportunity to network with M&S organizations such as SISO, the DEVS-Standards Group, and M&SNet, and to exchange ideas with other M&S practitioners who participate in related SMCsymposia. In order to promote wider discussion of DEVS-related advances in research and industry applications, presentations at the DEVS Symposium will be coordinated with other SMC symposia. Topic areas include (but are not limited to)

- DEVS Theory and Methodology**
- Issues in DEVS Standardization
  - DEVS-integration of formalisms
  - Model continuity in system development
  - Hybrid system modeling & simulation
  - Dynamic structure modeling & simulation
  - Parallel & distributed modeling & simulation
  - Component-based modeling & simulation
  - DEVS Education

- Practices and Applications**
- Manufacturing systems
  - Military systems and infrastructures
  - Software-intensive/networked systems
  - Transportation and traffic
  - Multi-robotic systems
  - Real-time system modeling & simulation
  - Ecological and environment systems

When submitting abstracts and full papers, the DEVS Integrative M&S Symposium clearly marked. In addition to regular papers (to be about 10 pages in length, single spaced, with 12 pt font), the program committee may accept short papers (about 4 pages) or proposals for tutorials. Please submit papers in Word, PDF, or PostScript with the authors' complete addresses, phone, fax, and email. All submitted papers will be subject to a peer-reviewing process by three program committee members.

**Abstracts/Draft Paper Submission Deadline is October 31, 2004**

**General Chair**  
**Bernard Zeigler**  
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**APRIL 2-8, 2005 • HILTON MISSION VALLEY HOTEL • SAN DIEGO, CALIFORNIA, USA**  
**Co-LOCATED WITH SISO 2005 SPRING SIW [HTTP://WWW.SISOSTDS.ORG](http://www.sisostds.org)**