

# SUMMERSIM'19

## 2019 Summer Simulation Conference

### AIMS AND SCOPE

The **Summer Computer Simulation (SCSC)** track aims to reflect what makes M&S a discipline. 2019 marks the 51st edition of SCSC. Since 1968, SCSC has been a forum to exchange ideas, research results, methods, techniques, and applications among Simulationists from industry, government, and academia. Some of the sub-tracks included in the SCSC track are listed below.

### SUB-TRACKS

#### ***Applied Theory of Modeling and Simulation (AToMS)***

**Track Chair:** José L. Risco Martín

Real-world applications were originally the driving force for the development of Modeling and Simulation (M&S) theories. After that, Theory of Modeling and Simulation (TMS) was conceived as a necessary artifact to develop models and simulations with theoretical background. The purpose of this track is to provide a forum to show recent success stories about the application of M&S theories to the real world. The aim is to bring rigorous experimental, computational practice of TMS devoted to the study of real-world problems.

#### ***Cyber-Physical Systems (CPS)***

**Track Chairs:** Joachim Denil, Alfredo Garro

(CPS) calls for papers describing research and technology for modeling, simulation, design, and analysis for complex computer-controlled physical systems, or cyber-physical systems, which use computational and communication functionality to sense and control the physical environment. The global societal scale impact and applications of CPS span smart manufacturing, smart energy, smart mobility, smart health, smart society, and smart mobility.

#### ***Humans, Societies and Artificial Agents (HSA)***

**Track Chair:** Saikou Diallo

(HSA) calls for simulation models and practices emerging at the interface of the humanities, social sciences and engineering with the potential to create novel conceptual approaches in addition to the mathematical and computational models, with the capacity to capture complex human and social behavior.

#### ***Modeling and Simulation in Aerospace (AeroSim)***

**Track Chairs:** Alessandro Golkar

(AeroSim) calls for papers that utilize modeling and simulation to solve emerging aerospace challenges from unmanned platforms to urban air mobility, from commercial space exploration to deep space exploration. AeroSim spans over M&S methodologies, tools, and techniques tailored around aerospace.

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## ***Simulation in the System Design Flow (SDF)***

**Track Chair:** Alberto A. Del Barrio

Simulation in the System Design Flow (SDF) is a track specially intended to those works tackling the simulation problem during the entire design flow for electrical circuits. Knowing how a deployed circuit will behave beforehand is critical. Modeling dynamic events as well as works on IoT and ML architectures are particularly encouraged for this track.

## ***Modeling and Simulation as a Service (MSaaS)***

**Track Chair:** Andrea D'Ambrogio

Modeling and Simulation as a Service (MSaaS) is gaining momentum as an effective approach to bringing the benefits of service-oriented architectures and cloud computing into the arena of modeling and simulation (M&S), so as to enhance interoperability, composability, reusability and to reduce the cost of M&S efforts. We aim to bring together researchers and practitioners from academia, industry, defense and government to present experiences, innovative approaches, and smart solutions, as well as to discuss challenges that address service-oriented and cloud-based issues in the field of M&S and vice versa.

## ***Grand Challenges in Modeling and Simulation (GC)***

**Track Chair:** Ali Elkemel

Modeling and simulation (M&S) have emerged to be invaluable tools for addressing and solving problems virtually and in real time in almost all fields. Research and development in M&S have been revolutionary in the late 20th century and 21st century which made M&S to be both intra and inter disciplinary. The current research in M&S is very diverse mostly focusing on designing and implementing new methodologies, improving the existing methodologies and minimizing the limitations in terms of their applicability to multidisciplinary fields. This creates a challenge for authors seeking a venue to publish research contributions that would advance, facilitate and coordinate several aspects of M&S. To address this need, this is dedicated to contributions in Grand Challenges in M&S (GC). Contributions are welcome in the areas of parallel and distributed simulations, supercomputing, grid computing, cloud computing, complex adaptive systems, data modeling, stochastic modeling and simulation, multiscale modeling and simulation, high speed optimization and network simulation.

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***Emergency Modeling and Simulation (EMS)***

***Track Chair:*** Francesco Longo, Letizia Nicoletti

Nowadays continuous incidents, terrorist threats, catastrophic events have strongly underlined the need to plan and organize contingency and emergency plans to deal with emergency situations. In this framework, the EMS track aims at capturing as well contributing to the latest advances in emergency management procedures and approaches with a special focus on emergency responses procedures using Modeling and Simulation. Main Topics are: Simulation and testing of emergency scenarios; Personnel training through Simulation; Modeling & Simulation of human crowd behavior; Modeling & Simulation of critical incidents; Synthetic and Virtual Environments for emergency situations; Medical emergency Simulation; Police, fire emergency Simulation; Emergency response Simulation; Simulation games for incidents and threats management; Modeling & Simulation of terrorist attacks; Modeling & Simulation of natural disasters; Emergency management systems; Emergency response Simulation in industry, supply chain and logistic networks.