Call for Papers

Journal of Defense Modeling and Simulation: Applications, Methodology, Technology (JDMS)

Special Issue: Modeling and Simulation of Quantum Information, Quantum Communication, and Quantum Key Distribution (QKD) Systems

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Introduction

Recent technology advances in quantum information theory have yielded a variety of practical applications in information and communication systems which exploit quantum effects. One of the most popular quantum information technologies in use today is Quantum Key Distribution (QKD). Due to inherent system complexities, modeling and simulation is an effective tool for the development of quantum information systems. To address this need, defense organizations are developing tools, techniques, and frameworks to facilitate the assessment of components, subsystems, and complete systems. The goal of this Special Issue is therefore to provide a venue for examples of methodology, implementation, and cases where quantum information, quantum communication, and/or QKD systems are modeled and simulated to inform architectural analysis, system development, and performance evaluation. Potential contributions can include, but are not limited to:

- Evaluation of components or protocols used in quantum information systems
- Combined discrete / continuous model-based approaches for quantum information system analysis / development
- Analysis of alternatives for optimization of quantum information system designs
- Lifecycle modeling of quantum information systems
- Case studies of M&S used to support rapid prototyping for quantum information systems
- M&S frameworks for automation of quantum information system prototyping: tools, techniques, and methods
- Representing / analyzing quantum information system operational risk
- Visualization or other human interaction with quantum information system data and information
- Analyze the performance and security of quantum technologies
• Organizational change and process transformation required to leverage quantum information system
• Case studies of value added or new capability achieved with quantum information systems
• Simulation of both terrestrial and space-based QKD systems.

Papers submitted should not be concurrently under review at another conference, journal, or similar venue.
Instructions for Manuscript Preparation

For manuscript formatting and other guidelines, please visit the Author Guidelines for JDMS.

Note: Manuscripts must not have been previously published or be submitted for publication elsewhere. Each submitted manuscript must include title, names, authors' affiliations, postal and e-mail addresses, and a list of keywords. For multiple author submission, please identify the corresponding author.

Due Dates

Submission of papers March 01, 2016
Expected date of publication Fall 2016/Winter 2017

Submissions for full paper review

All manuscripts must be submitted electronically through the paper submission system to the JDMS Manuscript Submission System. In the title page, author(s) must specifically mark that the paper is intended for this special issue as follows: "Submission for the Special Issue of JDMS: Modeling and Simulation of Quantum Information, Quantum Communication, and Quantum Key Distribution (QKD) Systems. Please follow the guidelines for submission on the Manuscript Central site.

Final paper submissions

Each final submission must be prepared based on the JDMS journal requirements (see the Author Guidelines for JDMS page).

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