



Call for Papers

**Special Issue on Computational Reliability
in Engineering and Science
Journal of Computational Science (JoCS)
Elsevier Publishers**

<http://www.journals.elsevier.com/journal-of-computational-science/>

SCOPE: Reliability is one of the most fundamental attributes in quality metrics, and receives considerable attentions in all engineering and computer science fields. Since the modern systems in mechatronics, electronic and electrical engineering, computer science, chemical plant and process engineering, structural engineering, etc. are large scaled and much complex, efforts to assess the system reliability are becoming large as well. In fact, we often encounter serious computational problems in reliability, safety and maintenance practices. Computational reliability focuses on the computational aspects to assess reliability, maintainability and safety of complex systems quantitatively and efficiently.

In this special issue we focus on Computational Reliability in Engineering and Science. The 2015 International 9th International Conference on Mathematical Methods in Reliability (MMR 2015) will be held in Tokyo, Japan, June 1-4, 2015, which is one of core conferences in reliability engineering. Based on the outstanding papers presented in MMR 2015, we plan to edit a special issue of the *Journal of Computational Science* (Elsevier Publishers). The manuscripts submitted to the journal special issue should be substantial extensions of the original conference papers in order to be independent of the conference proceedings.

Topics on all the computational aspects arising in reliability, safety and maintenance engineering include, but are not limited to:

- Reliability assessment for complex systems (mechanical systems, electronic and electrical systems, computer systems, telecommunication systems, chemical plants, structured systems)
- Process control and management techniques for reliability (accelerating life testing, statistical quality control, maintenance planning)

- Reliability design and optimization algorithms (linear and nonlinear programming, combinatorial optimization, dynamic programming, meta heuristics, nature-inspired computing, computational complexity)
- High performance computing in reliability and safety (large scaled Markov chain analysis, FTA, FPGA application, distributed and parallel algorithms)
- Survivability analysis (statistical inference, field data analysis, statistical hypothesis test, time series analysis)
- Simulation (rare-event simulation, Markov chain Monte Carlo, importance sampling)
- Machine learning (regression analysis, clustering, SVM, PCA, decision tree, wavelet, neural computing, reinforcement learning, Bayesian network)
- Big data analysis (cyber physical systems, cloud service and computing, data mining, repository data utilization)

IMPORTANT DATES:

July 31, 2015: First submission date (open date of EES)

September 30, 2015: Paper submission due date for the special issue

December 31, 2015: Revision due date in the first round of review

June 30, 2016: Notification of acceptance/rejection of the special issue papers

INSTRUCTION OF THE AUTHORS: Authors are strongly encouraged to present their papers in MMR 2015, June 1-4, 2015, Tokyo, Japan, but are not mandatory for inclusion of them in the special issue. The authors should submit their manuscripts (p.d.f. files) with significant extension through the journal's electric submission site (EES), before the submission due date. In preparing their manuscripts, the authors are requested to check carefully the Instructions to Authors on the journal homepage and should follow these instructions completely with a given format. Otherwise, manuscripts may be rejected and returned to the authors without review. Each paper will be peer-reviewed by two referees.

GUEST CO-EDITORS:

Tadashi Dohi, Professor
Hiroshima University, Japan
Email: dohi@rel.hiroshima-u.ac.jp

Hisashi Yamamoto, Professor
Tokyo Metropolitan University
E-mail: yamamoto@tmu.ac.jp