International Conference on Mathematics and Computational Methods
Applied to Nuclear Science and Engineering
Sun Valley, ID, USA • May 5-9, 2013

# CALL FOR PAPERS

# 2013 International Conference on Mathematics & Computational Methods Applied to Nuclear Science and Engineering

## Sun Valley, ID, USA • May 5-9, 2013

The Mathematics & Computation Division (MCD) of the American Nuclear Society (ANS) and the Idaho Section of the American Nuclear Society (IANS) are hosting the M&C 2013 Conference on Mathematics & Computational Methods Applied to Nuclear Science and Engineering. Full papers are being sought in the areas of mathematical and computational methods for analysis of nuclear systems. Specific topics from related disciplines include reactor physics, radiation transport, materials science, nuclear fuels, shielding, fluid dynamics, medical applications, as well as numerical methods, fundamental mathematics and analytical methods and benchmark solutions.

## Subject Categories

- Deterministic Transport
- Monte Carlo/Hybrid Transport
- Nuclear Reactor Core Performance and Optimization
- Nuclear Reactor Systems and Safety
- Accelerator Target Systems and Accelerator Driven Reactors
- Criticality Safety
- Nuclear Data
- Multi-Physics Power Reactor Simulations
- Radiation Protection and Shielding
- Advanced Reactor Concepts
- Fusion Energy and Plasma Physics
- Thermal Fluids and Conjugate Heat Transfer
- Multiphase Flow
- Reactor Materials and Structures
- Nuclear Fuels Design, Performance, and Disposition
- Medical Physics
- Verification, Validation and Uncertainty Quantification
- Algorithms for Advanced Architectures

## GENERAL GUIDELINES:

### Manuscript Content
The content of the manuscript must include:
    1) An abstract briefly outlining the objectives of the research, study, or investigation and the

methodology used, and the main findings and their potential applications.

2) An Introduction that concisely outlines the objectives of the new research, study, or investigation and the methodology used. The relationship of the new work to existing pertinent literature should be well defined. It should also describe the main findings and their potential applications.

3) A Manuscript body that adequately defines the new theory, models, and/or methods. Enough detail should be included for peer-reviewers to make an informed decision on the appropriateness of the manuscript for the M&C 2013 conference and for future readers of the manuscript to be able to reproduce the results.

4) A detailed Results section supporting, with a high degree of confidence, the following conclusions.

5) Summary and Conclusions.

6) Acknowledgments (optional)

7) References

8) Supporting Appendices (optional).

Above all, sufficient information must be included for an independent reviewer to determine the validity of the research or the completeness of the applied analysis. Templates for both MS Word and Latex formats can be found at www.mc2013.org/News&Updates

## Submission Deadline
Full papers of no longer than 12 pages and no more than 10MB must be submitted electronically no later than November 15, 2012, in order to ensure that it is included in the review process. There will be a page charge of $100.00 per page over 12 pages.

## Author's Organization Approval
• All internal reviews and organizational approvals must be completed prior to submittal.
• It is the responsibility of the author to protect classified and proprietary information.

## Paper Acceptance Criteria
Papers are expected to contain descriptions of work that is new, significant, and relevant to the conference subject categories. Papers will be reviewed according to journal standards prior to acceptance. Submissions should contain new data and investigations in scientific or program areas that are of general interest, address problems of interdisciplinary significance, or include in-depth discussions of scientific and technical issues. Criteria for selection include originality, relevance, validity of method, clarity and conciseness of communication, and adherence to

scientific methods. Compliance with content and length guidelines is mandatory for acceptance. The following are considered guidelines for acceptable MCD papers and are intended to augment the general ANS acceptance guidelines:

1. The paper should describe original work that is of interest to the ANS MCD membership:
   - Mathematical theory
   - Computational methods
   - Numerical analysis
   - New understanding of existing methods/algorithms
   - New benchmark solutions/comparisons
   - Methods, algorithms, or performance on new computer architectures

2. The paper should clearly describe the new aspects of the work in relation to the literature.
3. An acceptable paper should reflect the contents and scope of the work and provide sufficient purpose, background description, and results to be understandable and informative.
4. Except for new mathematical proofs and analytical solutions, numerical results are mandatory.
5. Where possible, comparisons of accuracy, efficiency, and stability should be made to currently used methods.
6. The authors should make sound conclusions based on the new work.
7. All submissions must be in English.

Papers may be submitted for oral or poster presentation. Outstanding or significant papers may be organized for a special issue in a refereed journal.

**Electronic Manuscript Submissions**
Papers must be submitted electronically through www.ans.org/meetings/mc2013

**Important Publication Dates**
• Manuscript Deadline: November 15, 2012.
• Notification to Authors: February 15, 2013
• Corrected Paper Submission Deadline: March 15, 2013

**Additional Guidance**
For additional guidance regarding paper and summary templates, formatting, publication methods and publication requirements please visit the conference website (www.mc2013.org).