



Call for Papers
IEEE TRANSACTIONS ON
AUTOMATION SCIENCE AND ENGINEERING
Special Issue on Scientific Workflow Management and Applications
<http://www.swinflow.org/si/t-ase.htm>

IEEE

Scientific workflow is a new special type of workflow that often underlies many large-scale complex e-science applications such as climate modeling, structural biology and chemistry, medical surgery or disaster recovery simulation. Compared with business workflows, scientific workflow has special features such as computation, data or transaction intensity, less human interaction, and a large number of activities. Some emerging computing infrastructures such as grid computing with powerful computing and resource sharing capabilities present the potential for accommodating those special features. Currently, many efforts are being on this new workflow area, and workshops such as WaGe07, WORKS07, WSES07, SWF07 and NSF funded workshop on challenges of scientific workflows have been or are being held to explore scientific workflow issues. Gradually, research results are published and several scientific workflow management systems such as SwinDeW-G, Kepler and Taverna are developed or evolved from existing systems. However, in general, research and development in scientific workflow management are still in their infancy with obscure knowledge of scientific workflow specific features and techniques. This special issue aims to systematically investigate and shape the special features, challenges and new techniques of scientific workflows as well as corresponding applications and underlying computing infrastructures. Original and unpublished high-quality research results are solicited to explore and boost the new area. The topics for contributions include, but are not limited to:

- Special features of scientific workflows and their hints on new techniques
- Scientific workflow modeling, execution and scheduling
- Formal representation, scientific workflow patterns
- Control flows and data flows in scientific workflows
- Web/grid services based scientific workflows
- Application programming interface and Graphical user interface
- Scientific workflow verification and validation
- Exception handling, Quality of Service, performance and security issues in scientific workflows
- Underlying infrastructures targeting scientific workflow support
- Real-world scientific workflow applications

Important Dates

March 31, 2008	Paper submission deadline
July 31, 2008	Completion of the first round review
November 30, 2008	Completion of the second round review
January 15, 2009	Final manuscript due
July 2009	Tentative publication date

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Paper Submission

All papers are to be submitted through the **Manuscript Central** for T-ASE at <http://mc.manuscriptcentral.com/t-ase>. Please select "Special Issue" under Manuscript Category of your submission. All manuscripts must be prepared according to the IEEE T-ASE publication guidelines <http://www.engr.uconn.edu/~ieeetase/>. Papers will be reviewed following the standard IEEE T-ASE review process.

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