

Call for papers for the ACM Symposium on Solid and Physical Modeling

SOLID and PHYSICAL MODELING 2005

MIT, Cambridge, MA, June 13-15, 2005

<http://www.solidmodeling.org/spm.html>

International Convention on Solids & Shapes 2005

Since its inception in 1991, the ACM Symposium on Solid Modeling and Applications has been the primary venue for disseminating research results in the design, representation, analysis, visualization, and use of digital models of real or planned solid objects and of their bounding surfaces. We continue to seek research contributions that strive to advance the domain, accuracy, and effectiveness of such representations and algorithms.

At the same time, modeling solids entails not only modeling their geometric shape, but also their physical properties and behaviors. To emphasize this broader mission, we have expanded the name of the Symposium to Solid and Physical Modeling (abbreviated SPM). To meet these goals, we encourage submissions dealing with the **analysis, simulation, modeling, and animation** of the **behavior** of objects and their properties as functions of space and time, possibly in response to **interactions** with a human user or the environment.

SPM will be run in plenary sessions (no parallel tracks) from Monday June 13 to Wednesday June 15, and will be followed by the [Shape Modeling International](#) (SMI) conference, which will start on Wednesday June 15 with a shared day with SPM and will last until Friday June 17. Both SPM and SMI events are part of the [2005 Joint Convention on Solids and Shapes](#), (S&S'05), which will be hosted at MIT and chaired by [Prof. Nick Patrikalakis](#). The 2004 Joint Convention on [Shapes and Solids](#) took place in Genoa Italy. Details on the previous Solid Modeling Symposia may be found from the web page of the [Solid Modeling Association](#).

In addition to technical papers in plenary sessions, the program for SPM 2005 will include:

- Academic and industrial tutorials
- Keynote lectures
- Panels, poster, and emerging-technologies sessions
- A best paper award

Symposium Co-Chairs:

Ralph Martin, Cardiff University, UK

Jarek Rossignac, GaTech, USA

Program Co-Chairs:

Leif Kobbelt, RWTH Aachen, Germany

Vadim Shapiro, University of Wisconsin, USA

Special Track Chairs:

Dimitris Metaxas, Rutgers, USA (Biomedical Modeling)

Michael Wang, CUHK, HK (Physical Modeling & Simulation)

Jan Vandenbrande, Boeing, USA (Design & Manufacturing)

The papers submission schedule is as follows

- October 15, 2004: Abstracts due
- November 1, 2004: Full papers due
- January 20, 2005: Notice of acceptance and reviews
- March 31, 2005: Camera-ready papers due

For details on how to submit abstracts and papers, please consult the conference webpage <http://www.solidmodeling.org/spm.html>

Abstracts are requested in advance to facilitate the review process and should be 150-300 words in length. Papers are limited to 12 typeset pages, including figures and references, and should present previously unpublished original results that are not simultaneously submitted elsewhere.

Topics of interest include, but are not limited to:

- Biomedical applications of shape and solid modeling
- Blend, sweep, offset, Minkowski, and other operations
- Constraint modeling & satisfaction
- Curve, surface, and manifold modeling
- Data fitting and approximation
- Design, analysis, simulation, automation and optimization
- Dimensioning & tolerancing
- Fidelity of physical models and representations
- Function and assembly modeling
- Geometric and topological representations of shapes
- Geometric interrogation and reasoning
- Geometry compression
- Geo-scientific applications
- Heterogeneous models of physical objects and properties
- Manufacturing and assembly planning
- Mesh processing
- Model validation and repair
- Multi-resolution techniques
- Parametric and feature-based models and representations
- Physically-based concepts for shape modeling
- Product data standards, exchange, and interoperability
- Reverse engineering, model reconstruction from samples
- Robustness and validity of geometric computations
- Shape analysis & understanding
- User interaction and haptic interfaces
- Virtual, collaborative and distributed environments

All papers will be peer-reviewed. Papers accepted as full technical contributions will be presented during the plenary sessions and will appear in the conference proceedings published by ACM Press. Other papers may be accepted for presentation in a poster session and will be published in the proceedings as extended abstracts. After the symposium, selected papers will be invited for publication in special issues of the scientific journals *JCISE* and *Graphical Models*.

International Program Committee:

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