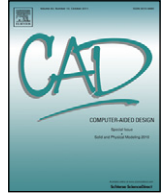




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Preface

The 2011 SIAM Conference on Geometric and Physical Modeling, a joint event of the 2011 SIAM Conference on Geometric Design and the 2011 Annual Symposium on Solid and Physical Modeling, was held in Orlando, from October 24 to October 27, 2011.

The SIAM Geometric Design (GD) and the ACM Solid and Physical Modeling (SPM) communities have a shared heritage dating back to the early 1980s. This biennial joint conference (started in 2009) represents an effective union of these communities, their academic and industrial contributors, as well as their common intellectual research and development themes. Over the past twenty years the meetings of the SIAM Special Interest Activity Group on Geometric Design have been one of the main international conferences on geometric modeling and related areas, and well attended by mathematicians, computer scientists, and engineers alike, from academia, industry, and government. Since its inception in 1991, the ACM Symposium on Solid and Physical Modeling has been the primary international forum for disseminating research results and exchanging new ideas of applications complete with the relevant mathematical theory of solid modeling, physical modeling, geometric design, analysis, simulation and processing, and visualization.

In continuing the ACM-SPM tradition, the conference includes a track for submission of technical papers for those wishing rigorous peer review and published proceedings. In response to the call for papers, 76 technical papers were submitted and reviewed by an international program committee with 103 experts, with five committee members reviewing each paper. From these submissions, 22 papers were selected for plenary presentation and publication in this special issue. (Starting from this year, the SPM proceedings will be published as a special issue of Computer-Aided Design, available at the time of the conference. Our special thanks go to Kunwoo Lee, Imre Horvath, Nicholas Patrikalakis, and Gail Rodney at Computer-Aided Design for supporting this special arrangement with SPM.)

In addition, in the tradition of previous SIAM GD events, abstracts for minisymposia and contributed presentations/posters were solicited. Twelve minisymposia, 41 contributed presentations, and 11 posters have been selected from the received proposals.

There were six invited plenary talks by academic and industrial luminaries, Ken Clarkson (IBM Almaden Research Center), Tamal Dey (Ohio State University), Kai Hormann (University of Lugano, Switzerland), Thomas Hughes (University of Texas at Austin), Kunwoo Lee (Seoul National University, Korea), and Konrad Polthier (Freie Universität Berlin, Germany), spanning the multi-disciplines of GD and SPM.

The 2011 Pierre Bézier Award of the Solid Modeling Association was awarded at the conference to Christoph M. Hoffmann (Purdue University). Along with receiving the award, he presented the Pierre Bezier Award Lecture.

We would like to acknowledge the efforts and contributions of the many people who helped to make this conference a success. Members of the program committee spent countless hours carefully reading and reviewing the submitted papers. The conference general co-chairs, Nick Patrikalakis, Jörg Peters, Jarek Rossignac, and Timothy L. Strotman, put in a tremendous amount of time and effort into organizing the conference. The support from the SIAM staff, in particular Kirsten Wilden, was also indispensable in this regard. We also thank all the authors who submitted papers to this conference – their ongoing support made this conference a huge success. Last but not least, we are grateful to Siemens Corporation for sponsoring the Best Paper Awards.

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