Claire J. Tomlin
Mark R. Greenstreet (Eds.)

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Hybrid Systems: Computation and Control

5th International Workshop, HSCC 2002
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Preface

This volume contains the proceedings of the *Fifth Workshop on Hybrid Systems: Computation and Control* (HSCC 2002), which was held in Stanford, California during March 25-27, 2002. The Hybrid Systems Workshops attract researchers interested in the modeling, analysis, control, and implementation of systems which involve the interaction of both discrete and continuous state dynamics. The newest results and latest developments in hybrid system models, formal methods for analysis and control, computational tools, as well as new applications and examples are presented at these annual meetings.

The Fifth Workshop continues the series of workshops held in Grenoble, France (HART'97), Berkeley, California, USA (HSCC'98), Nijmegen, The Netherlands (HSCC'99), Pittsburgh, Pennsylvania, USA (HSCC 2000), and Rome, Italy (HSCC 2001). Proceedings of these workshops have been published by Springer-Verlag, in the Lecture Notes for Computer Science (LNCS) series.

This year, we assembled a technical program committee with a broad expertise in formal methods in computer science, control theory, software engineering, numerical analysis and artificial intelligence; as well as experts in science and industry who are working in the application of hybrid system methods to problems in their domains. In response to our Call for Papers, 73 high quality manuscripts were submitted. After detailed review and discussion of these papers by the program committee, 33 papers were accepted for presentation at the workshop, and the final versions of these papers appear in this volume.

As is the tradition established by previous workshops, the accepted papers span an exciting range of topics, from formal methods of model abstraction, refinement and reduction, to fault diagnosis and recovery, to new methods for synthesizing and analyzing control for hybrid systems. As the theory of hybrid systems starts to mature, we are aware of the importance of good application of this theory: we are happy to include a strong set of application papers, including the hybrid analysis of engine control and power systems, robotic assemblies and smart actuators. Also, now that computational problems in hybrid systems are coming to the fore, we are pleased to note the growing interest in the development of sound numerical techniques for hybrid systems analysis, and to include several numerical papers in this volume.

We are pleased to acknowledge the National Science Foundation and Stanford University for financial support of this workshop. We thank our Program Committee for their technical support in reviewing the papers. Finally, our great thanks goes to our Organizing Committee, including Ian Mitchell, who installed and managed the automatic software for paper submission and review, Ronojoy

Ghosh, who designed the conference web site and managed the computer server, and to Sherann Ellsworth and Dana Parga, who organized and handled all of the local arrangements of venues, catering, hotels, and registration.

March 2002

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