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| Nota di contenuto | Abstracts of Invited Presentations -- The Mathematics of Matter and the Mathematics of Mind -- A Grand Challenge: Full Reactive Modeling of a Multi-cellular Animal -- Developing Home Robotics Products: Challenges and Lessons Learned -- Regular Contributions -- Progress on Reachability Analysis of Hybrid Systems Using Predicate Abstraction -- Reachability Analysis of Nonlinear Systems Using Conservative Approximation -- Mode Reconstruction for Source Coding and Multi-modal Control -- Hybrid Control Design for a Wheeled Mobile Robot -- Modeling and Control of SMT Manufacturing Lines Using Hybrid |

Dynamic Systems -- Hybrid Control of an Automotive Robotized Gearbox for Reduction of Consumptions and Emissions -- A Greedy Approach to Identification of Piecewise Affine Models -- A Hoare Logic for Single-Input Single-Output Continuous-Time Control Systems -- Reachability Questions in Piecewise Deterministic Markov Processes -- Automatic Verification of a Turbogas Control System with the Mur? Verifier -- Modeling the Electrical Activity of a Neuron by a Continuous and Piecewise Affine Hybrid System -- Hybrid Control of Parabolic PDEs: Handling Faults of Constrained Control Actuators -- Conditions of Optimal Classification for Piecewise Affine Regression -- Approximate Stabilisation of Uncertain Hybrid Systems -- Efficient Mode Enumeration of Compositional Hybrid Systems -- Automated Symbolic Reachability Analysis; with Application to Delta-Notch Signaling Automata -- Modelling, Well-Posedness, and Stability of Switched Electrical Networks -- Hybrid Modeling and Simulation of Genetic Regulatory Networks: A Qualitative Approach -- On Systematic Simulation of Open Continuous Systems -- Estimation of Distributed Hybrid Systems Using Particle Filtering Methods -- Event Prediction for Switching Linear Systems with Time Varying Thresholds Using Orthogonal Functions -- On the Causality of Mixed-Signal and Hybrid Models -- Safety Verification of Model Helicopter Controller Using Hybrid Input/Output Automata -- Multi-object Adaptive Cruise Control -- Universality and Language Inclusion for Open and Closed Timed Automata -- On the Application of Hybrid Control to CPU Reservations -- Stabilization of LTI Systems with Quantized State - Quantized Input Static Feedback -- Qualitative Heterogeneous Control of Higher Order Systems -- The Ö-Calculus: A Language for Distributed Control of Reconfigurable Embedded Systems -- Hybrid Modelling and Control of Power Electronics -- On the Optimal Control of Hybrid Systems: Optimization of Trajectories, Switching Times, and Location Schedules -- Efficient Representation and Computation of Reachable Sets for Hybrid Systems -- Model Checking LTL over Controllable Linear Systems Is Decidable -- Approximate Reachability for Linear Systems -- Observability of Linear Hybrid Systems -- Results and Perspectives on Computational Methods for Optimal Control of Switched Systems.

Sommario/riassunto

This volume contains the proceedings of the Sixth Workshop on Hybrid Systems: Computation and Control (HSCC 2003), which was held in Prague, during April 3–5, 2003. 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 Sixth Workshop continued the series of workshops held in Grenoble, France (HART'97), Berkeley, California, USA (HSCC'98), Nijmegen, The Neth- lands (HSCC' 99), Pittsburgh, Pennsylvania, USA (HSCC 2000), Rome, Italy (HSCC 2001), and Stanford, California, USA (HSCC 2002). Proceedings of these workshops have been published by Springer-Verlag in the Lecture Notes in C- puter Science (LNCS) series. This year we assembled a technical program committee with a broad expertise in formal methods in computer science, control theory, applied mathematics, and arti?cial intelligence. We received a set of 75 high-quality submitted papers. After detailed review and discussion of these papers by the program committee, 36 papers were accepted for presentation at the workshop, and the ?nal versions of these papers appear in this volume.