IEEE CSS Technical Committee
Hybrid Systems

Meeting at the 2017 American Control Conference

Ricardo Sanfelice
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University of California, Santa Cruz
1. Introduction
2. Membership information
3. TC Webpage
4. TC Projects/Activities
   - Update on recent TC report
   - Update on CSM column about TC activities
   - Update on TC Newsletter
   - Focused research meeting at “research station”
     with M. Prandini, R. Jungers, and M. Zamani
   - Update on hybrid systems entry at Wikipedia.org
     update for Alessandro Abate
   - Discussion on changing TC name
   - Discussion on book/collection/special issue project
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Membership: 65 active members (previously 57)
  ▶ 62 from academia
  ▶ 3 from industry
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The TC is part of the organization of the invited sessions:
- “Recent Advances in Stability and Control of Hybrid Systems” at the IFAC NOLCOS Conference in August 2016
- One session on variational analysis and three sessions on event-triggered control at the IEEE CDC in December 2016

This is our first TC meeting this year.
TC Google Group

- TC Webpage

http://hybrid-systems.ieeecss.org
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- Updated regularly with new members and reports
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▶ Newsletter tab
TC Google Group

- TC Google group

HybridSystemsTC@googlegroups.com
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- NEW Quarterly newsletter
Agenda

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Published in CSM April 2017 Issue
**TC Activity: CSM article**

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- **Sample activities:**
  - Organization of invited sessions at conferences
  - Organization of workshops, symposiums, and conferences
  - Special issues in journals
  - Service to the field, such as Editor/AE of journals, active role in professional societies, etc.
  - Outreach activities
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We need a mechanism to report activities
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- **IDEA:** Meet yearly as a group at a “research station” such as
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  to work on a common research topic for 2-3 days.
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**At the 2016 CDC TC meeting we decided to work towards a proposal for a Dagstuhl seminar**
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- **Key details**:
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- The designed algorithms can be compromised by the unavoidably nonzero time needed to perform computations.
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  - The designed algorithms can be compromised by the unavoidably nonzero time needed to perform computations.
  - Techniques for the synthesis of algorithms should incorporate information about the computations required to be performed when implemented, and quantify the degradation of performance while guaranteeing certain fundamental properties.
  - The development of such synthesis techniques requires a radical change in the way algorithms for cyber-physical systems are designed.
TC Activity: “Hybrid System” Wikipedia.org entry

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https://en.wikipedia.org/wiki/Hybrid_system

by completing the description of a hybrid system, modeling, tools, etc.
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- NEW: Joint TC effort to update the entry
  (lead by Alessandro Abate)

1. Overview
2. Modeling Frameworks
3. Analysis Tools
4. Simulation tools
5. Further reading
6. References
TC Discussion item: TC name

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- What are the advantages and disadvantages of changing the name to IEEE CSS TC on Hybrid and Cyber-Physical Systems?
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Final points and Summary

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Thank you for your support and participation!