

IEEE CSS TC-SIAC meeting
ACC 2015, Chicago, Illinois (USA)

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Thursday, July 2nd, 2015
Hilton Palmer House, Chicago, IL (USA)

- 1 Agenda
- 2 Introductions
- 3 Reports on TC-SIAC membership and general items
- 4 Report on recently completed/on-going activities
- 5 Discussion and brainstorming of new initiatives

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Agenda

- Introductions
- Report on TC membership
- Report on recently completed/on-going activities
- Discussion and brainstorming of new initiatives
- Items from the floor

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Introductions

Please, introduce yourself (name, affiliation, research interests in system ID and/or adaptive control ...)

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Reports on TC-SIAC membership

- IEEE-CSS bylaws state that membership in a TC is available to any member in good standing, upon request.
- Currently, the committee consists of 104 members.
- Last TC meeting at the 2014 CDC in Los Angeles had 15 members in attendance.
- TC will meet again during the 2015 CDC in Osaka (Japan)
- Minutes, presentations, and other materials from prior meetings are accessible soon through the new TC website, located at:
<http://system-identification.ieeecss.org/tc-system-identification/home>

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Report on recently completed/on-going activities

- 1. TC-sponsored workshops

“Recent advances in modeling and control for Diabetes treatment”

- Pre-conference workshop at the 53rd IEEE Conference on Decision and Control (Los Angeles, USA)
- Joint activity with TC on Health Care and Medical Systems (chaired by Caterina Scoglio)
- Organizers: Diego Regruto and Daniel Rivera (TC-SIAC), Frank Doyle (TC-HCMS)
- The invited speakers (both from university and from industry) are all leading researchers in the field (see attached workshop description)

Report on recently completed/on-going activities

- 2. TC-sponsored Tutorial session

Two session on *“Big Data and Sparsity in System Identification and Control”*

- Tutorial sessions at the 53rd IEEE Conference on Decision and Control (Los Angeles, USA)
- Joint activity with TC-CACSD (chaired by Mario Sznaier)
- Organizers: Fabrizio Dabbene, Constantino Lagoa, Mario Sznaier and Diego Regruto (TC-SIAC, Tc-CASD)
- The invited speakers are all leading researchers in the field (see attached tutorial sessions description)

Report on recently completed/on-going activities

- Report on Invited sessions organized for the most recent conferences

- Stefan Streif co-organized two invited sessions (“Control and Estimation of Systems with Uncertainties” (WeA12) and “New Directions in Robust and Stochastic Model Predictive Control” (WeB07) for the next ACC 2015.
- Stefan Streif co-organized half-day workshop on: “Model-based Estimation, Fault Diagnosis, and Control of Uncertain Nonlinear Systems Using Polynomial Chaos” for ADCHEM’15
- Tom Oomen has co-organized the following invited sessions (including a number of contributions on applied system identification and adaptive control) for the ACC 2015:
 - “Precision Mechatronics - Motion Control” ACC 2015 (ThA03)
 - “Precision Mechatronics - High speed nanopositioning” ACC 2015 (ThB03)
 - “Precision Mechatronics - Control of AFMs” ACC 2015 (ThC03)
 - “Precision Mechatronics - Emerging Developments” ACC 2015 (FrA03)
 - “Emerging Trends in Iterative Learning Control” ACC 2015 (ThC05)
 - “Robust and Optimal Iterative Learning Control” ACC 2015 (FrB05)

Report on recently completed/on-going activities

- Report on Invited sessions organized for the most recent conferences

- Thomas Schn has co-organized an invited sessions on “Nonlinear System Identification and State Estimation using Sequential Monte Carlo” for the SYSID 2015.
- Fouad Giri, Johan Schoukens and David Westwick have co-organized the following invited sessions for the SYSID 2015:
 - “Stochastic Wiener Systems Identification”
 - “Block-Oriented Nonlinear System Identification”
- Diego Regruto (TC-SIAC chair) has co-organized together with Mario Sznaier (TC-CACSD chair) and Constantino Lagoa a Tutorial Session on “Big data in System Identification” for the SYSID 2015.

Report on recently completed/on-going activities

- Other activities related to SYSID 2015

- As is well known, the IFAC Symposium on System Identification (organized every three years) is one of most important conferences for researchers working in the fields of System Identification and Adaptive Control.
- Therefore, such a conference is of great importance for our TC, and TC-SIAC members are invited to contribute as much as possible to such an event.
- Diego Regruto (TC-SIAC chair), Erik Weyer and Tyrone Vincent (TC-SIAC members) acted as Invited Session Chairs for the SYSID 2015.

Report on recently completed/on-going activities

- CSS Wikipedia project

- Panos Antsklis reported (during the TAB meeting at the CDC 2012) on the efforts of a IEEE CSS committee (composed of Panos and Magnus Egersted) to improve the Wikipedia pages dedicated to control science and technology.
- After a lively discussion followed, the task of taking care/improving the Wikipedia pages was assigned to the TCs.
- Recent developments: see slides from last TAB meeting at CDC 2014.

Discussion and brainstorming of new initiatives

- CSS Wikipedia project

- In particular, our TC was invited to take care of the most important pages related to system identification and adaptive control.
- The TC-SIAC established a Working group (Girish Chowdhary and Tansel Yucelen). The task assigned to the Working group is to examine the current Wikipedia pages related to the topics in the scope of TC-SIAC and to propose possible improvements. We are waiting for formal inputs from the CSS Wikipedia Editor (Jacob Stroustrup).

Report on recently completed/on-going activities

- New TC-SIAC website

- The new website is available at <http://system-identification.ieeecss.org/tc-system-identification/home>
- Please, check that your name appears in the membership roster.
- You are invited to send to diego.regruto@polito.it your affiliation, position and contact info (request will be forwarded on the TC mailing list).

Report on recently completed/on-going activities

- System identification education depository

- Currently Available at <http://system-identification.ieeecss.org/tc-system-identification/educational-material>
- Vision is for
 - Collections of syllabi, presentations, and class notes in support of system identification and adaptive control topics
 - Peer-reviewed data and models
 - Software/algorithm depositories and virtual and/or interactive labs
- Current version of the page has some course syllabi and class links, as well as references to interactive tools
- We continue to actively solicit contributions

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Discussion and brainstorming of new initiatives

- New invited session planning

- Upcoming submission deadlines:
 - ACC 2016 in Boston (deadline September 27th, 2015)
 - CDC 2016 in Las Vegas (deadline March 15th, 2016)
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Discussion and brainstorming of new initiatives

- LPV benchmark

- The TC-SIAC has recently established a Working group (lead by Roland Toth and including myself and Guillaume Mercere) aimed at preparing a proposal for an LPV identification benchmark problem with a session dedicated to the comparison of the different approaches.
- The LPV identification benchmark was initially intended for proposing a session at the IFAC SYSID 2015.
- We have already done (mainly Roland and Guillaume) some works on the benchmark, but we are still on the way (brief report by Pepijn Cox).
- Submission of LPV benchmark session has been therefore postponed to one of the next conferences.

Discussion and brainstorming of new initiatives

- New special issues/sections proposals

- TC-SIAC members were quite active in proposing special issues on subjects related to system identification over the years.
- In particular the last two special issues appeared on the IEEE TCST (January, 2011) and on the IEEE TAC (November, 2014)
- TC-SIAC members are invited to propose ideas for new special issues/sections on the following journals:
 - IEEE CSM
 - IEEE Transactions on Control of Network Systems
 - Newly born CSS Transactions
 - Editor-in-chief: Ioannis Paschalidis
 - Deputy Editor-in-chief: Magnus Egerstedt
 - Website: <http://sites.bu.edu/tcns/>
 - Automatica
 - Other high quality journals.....

Discussion and brainstorming of new initiatives

- Proposal for a Special Issue on the IEEE CSM

- Title/subject (tentative): “System identification methods and applications: recent advances and challenges”
- Proposers: Diego Regruto, Marco Lovera.
- Richard Braatz (CSM Editor in Chief) was contacted and replied positively to the idea the special issue. However he asked us to write an submit a formal “Objective essay” describing the special issue objective.
- The special issue has been approved (on the basis of the submitted “Objective essay”).
- Next step: to collect 4 - 8 contributions (not possible to have a formal call for paper handled through paperplaza).
- The idea is to have an “informal” call for paper with a rather close deadline and see what happen (much more than 8 papers? less than 4?)
- Hard constraint: paper must focus on Real-world applications (real data from real applications..not toy applications) of (possibly advanced) system identification techniques.

Discussion and brainstorming of new initiatives

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Proposal for a Special Issue on IEEE Transactions on Control of Network Systems

- Title/subject (tentative): “Structural identification of networks of dynamical systems”
- Proposer: Donatello Materassi
- Report by Donatello.