

**Report to the IEEE Control Systems Society Outreach Program
Third Indian Control Conference, Guwahati, January 4 – 6, 2017
Submitted by
M Vidyasagar, General Chair**

Introduction

The Third Indian Control Conference (ICC) was held during January 4 – 6, 2017 on the campus of the Indian Institute of Technology, Guwahati.. The first ICC was held during January 5 – 7, 2015 on the campus of the Indian Institute of Technology Madras, while the second ICC was held during January 4 – 6, 2016 on the campus of the Mahindra Ecole Centrale, in Hyderabad. The fourth ICC will be held on the campus of the Indian Institute of Technology, Kanpur, during January 4 – 6, 2018. The Outreach Program of the IEEE Control Systems Society made a generous award of \$10,000 to support student participation in ICC2017. This report gives details of how the funds were utilized.

Technical Co-Sponsorship and Proceedings Acquisition

ICC2017 received both technical co-sponsorship and proceedings acquisition from the IEEE CSS. Thus, for the second time, the Proceedings would become a part of IEEE Xplore. Aspiring authors had to submit full papers, and reviewing of papers was handled through Papercept. Strict standards were enforced, and a total of 79 papers were accepted (out of 145 submissions) for oral presentation and for inclusion in the Proceedings (and IEEE Xplore). In addition about a dozen students from the host institute were encouraged to present poster papers which did not form a part of the proceedings.

Sponsorships

ICC2017 received Gold Sponsorships from Mathworks and GE, and Silver Sponsorship from the Science and Engineering Research Board, Government of India . In addition to the above financial sponsors, the Indian Institute of Technology, Guwahati, was also recognized as a Gold Sponsor for its support in kind.

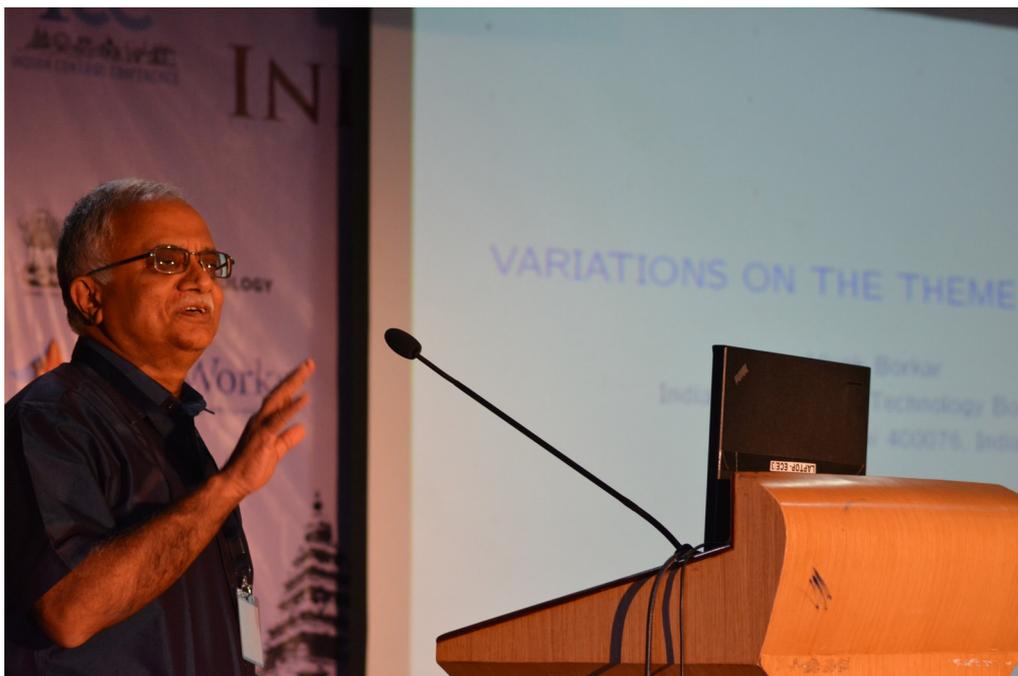


Figure 1: Prof. Borkar delivering his plenary lecture

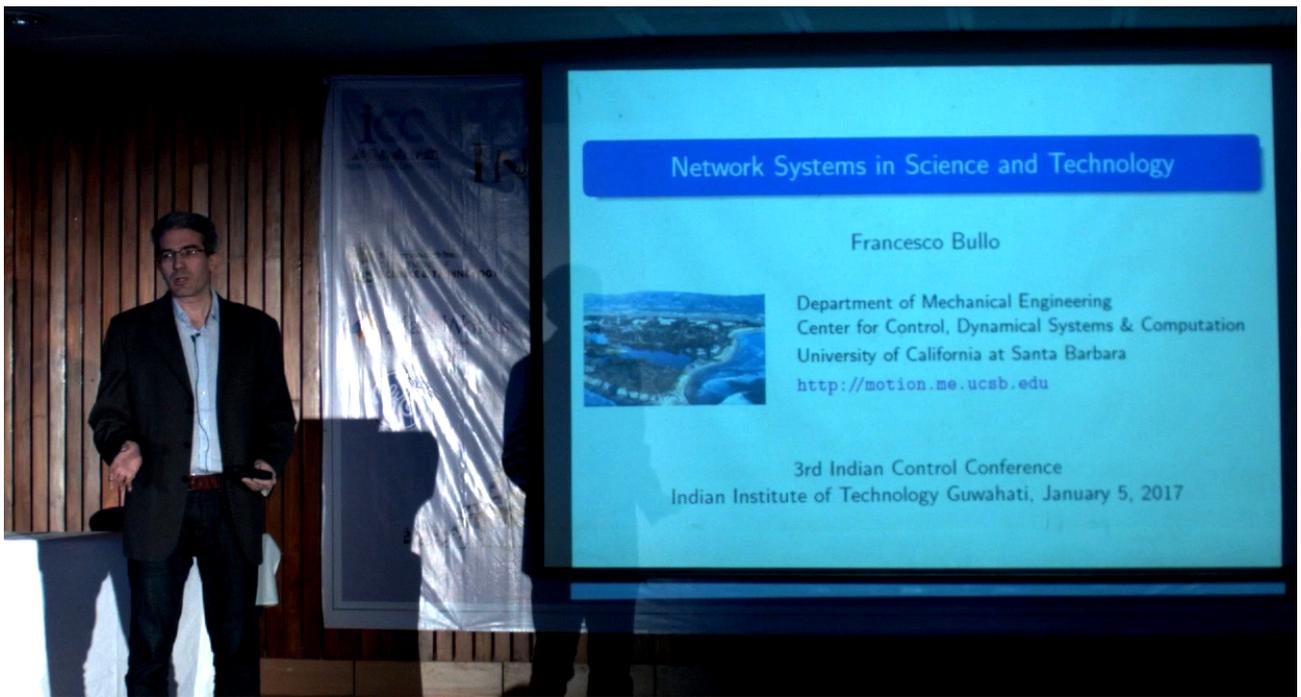


Figure 2. Prof. Francesco Bullo giving his plenary lecture.

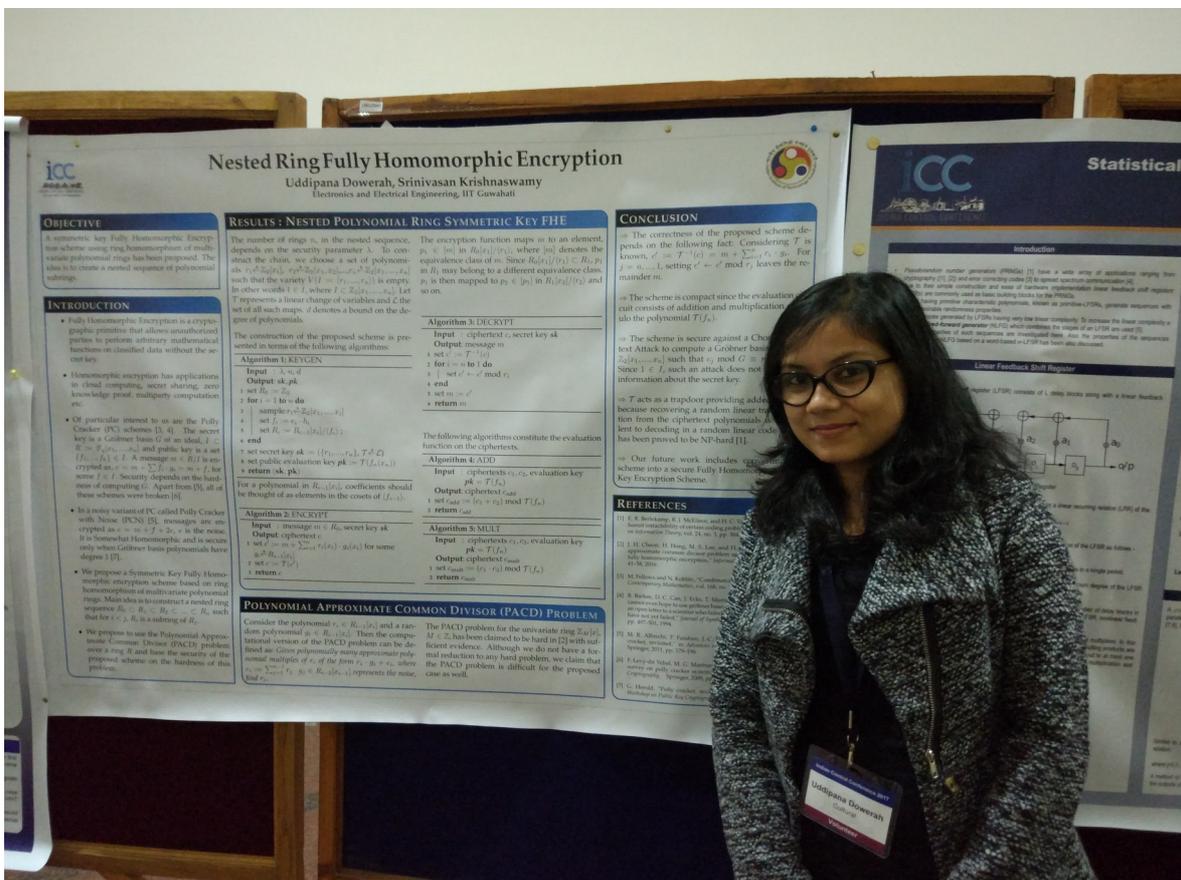


Figure 3. Poster Presentations

Technical Program

The first day of the conference was dedicated to tutorials. In the morning there was a tutorial by Mr. Naga Pemmaraju of Mathworks on the topic “Accelerating Control System Design Using Systematic Approach”. In the afternoon there was a Hands on Session by Team Mathworks on Modeling Physical Systems with Matlab, Simulink and Simscape. The next two days were devoted to plenary talks and oral presentations of accepted papers. There were four plenary speakers, namely: Murat Arcak of UC Berkeley, Hamsa Balakrishnan of MIT, Francesco Bullo of UC Santa Barbara and Vivek Borkar of the Indian Institute of Technology Bombay. The program also featured two plenary sessions by Industry participants titled “The Impact of Model-Based Design on Controls Today and in Future” by R. Vijayalayan of Mathworks and “Controls and Optimization at GE: Some Overview and Industrial Case Study” by Jayesh Barve of GE, India. In addition to the oral presentations, there was a poster session on the first evening, between the conclusion of the oral presentations and the award ceremony.



Figure 5. Bihu, a traditional folk dance, performed during the Cultural Program



Figure 6. Prof. Hamsa Balakrishnan of MIT delivering her plenary lecture



Figure 7. Prof. Murat Arcak of UC Barkeley delivering his plenary lecture



Figure 9. Presentation in a regular session



Figure

10. Organizers and the invited speakers

Student Support Program

In continuation with previous years' policies, the students chosen to receive support were required to pay the full student registration fee of Indian Rupees (INR) 4,500, or roughly USD 70, and then get reimbursed. The ceiling on reimbursable travel fare was increased to INR 9000 per student (being supported under the student support scheme). This is a departure from travel support of a maximum train fare of INR 3000 of previous years, since Guwahati, being in the North-East part of India, is farther than most other places in India. Of course, those who spent less than INR 9000 were reimbursed the actual amount. INR 9000 is about USD 140.

Other key features of ICC2017:

Student authors from IITs/IISc were not supported for registration since these institutes usually have other avenues to support the student authors' registration fees. In spite of this, there were no no-shows. Unless they were authors, the applicants who had received student support in the last two years for the past ICCs were denied student support this time. Many of these students must have found alternate funding arrangements and still participated.

Participation Statistics:

ICC 2017 was attended by 164 participants, comprising 117 students, 30 academic professionals, and 17 non-academic professionals. Out of the 117 student participants, 96 were supported through the Outreach Program of the CSS, for which the organizers are enormously grateful. 71 of the student participants were enrolled in Ph.D. programs in India. Of the 96 supported participants, 42 were authors. Authors from IITs and Non-IITs were 25 and 17 in number, respectively.

Budget:

The grant of USD 10,000 from the CSS Outreach Fund got converted to INR 666,900/-. The registrations and travel support itself amounted to INR 671,630/-. and accommodation amounted to INR 11,750/- . Therefore, the total expenses against the Student Support Programme was INR 683,380 , leaving a deficit of INR 16,480. This excess expense was taken from the general revenues to fund student participation.

Lessons Learnt:

With the experience of ICCs from 2015 and 2016, things went smoothly in the conference of 2017. The procedure of requiring students selected to receive support to pay the registration up-front and get reimbursed at the conference achieved the desired objective of eliminating no-shows. ICC 2018 will be held in Kanpur which is well-linked with road and rail service. Almost all students will be paid rail/road fare. In addition to support from CSS Outreach fund, we would seek to find additional sources.

Conclusion:

The organizers are enormously grateful to the CSS Outreach Fund for the generous support of USD 10,000, which facilitated the participation of 96 students. Having so many students in attendance gave a very youthful and energetic air to the ICC 2017.