Women in Control Newsletter

February 1996

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Newsletter Editor: Fahmida Chowdhury
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An Electronic Newsletter for Women Faculty Members, Practicing Engineers, Researchers, Students, and Others Interested in the Field of Control Theory and Applications. Participation by all members is encouraged Please send your postings to Fahmida Chowdhury at fnchowdh@mtu.edu.

In This Issue:

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1. Editor's Note:

   Greetings all! I hope all of you are having a productive and happy 1996 so far. This is IFAC year! I'm sure many of us will meet during the conference. Let us keep up the tradition of getting together for at least one meal.

   Also, please contribute to the neswletter. I know you have something to share!

   Sincerely,

   Fahmida Chowdhury

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2. From the Chair of the Committee:

   Another CDC is over. This time the CDC took place in New Orleans, Louisiana, which is a beautiful place with great restaurants and magnificent jazz. When I first came to Kansas, the famous New Orleans Jazz Band performed here and it was one of the most memorable events in my life. Many of you attended the CDC, but I am pretty sure that, like me, you didn't have time to listen to jazz. As always, the conference brought many, very many good speakers with interesting talks, and we were running from one talk to another trying to catch them all. Even though we were very busy, we had time to get together at a lovely lunch arranged by the Board of Governors who were enthusiastic about doing something for us. The large crowd of about 35 women and 4 men included the delightful daughter of Molly Shor, 2 husbands and 2 colleagues, Krishnan Baheti and Dan Reppenberg, who brought our guest of honor, Mao Jianqin, from Beijing to receive the very distinguished award for the best IEEE chapter. We offer our congratulations to Mao Jianqin. We had a very nice

representation from other countries, especially European ones, but also from Australia and China. Speaking with them after lunch, I learned a lot about their situations and I found it extremely interesting and worth publishing as an article in the Magazine. As I promised, I will be contacting some of you to ask for your contributions.

I have noticed a remarkable increase of women in Control. I think it is blooming. Many of you chaired sessions; many of you gave outstanding lectures. Our achievements are very noticeable. I have just opened the last issue of the Transactions on Automatic Control and looked at the very first page and ... 5 women are on the Editorial Board! And on the very last page...3 women are members of the Board of Governors!: Ann Annaswamy, who recently gave a birth to triplets (congratulations!) (life is unpredictable! ...), Cheryl Schrader, who has done an outstanding job with registration for the CDC in New Orleans (congratulations!), and Molly Shor, who continues to do an outstanding job for the IEEE Control Society. (It is remarkable how Molly can do it--the list of her positions and duties in upcoming conferences is too long to be mentioned.)

I was supposed to write a very short note, but I have found it hard to do so since I am so impressed and enthusiastic about your achievements (for example, seeing a book so well written by very young Margaret Kuijper from Australia - a book I now have on the shelf in my office). My dear, young, smart and brilliant friends, as a mother of an 11-year old daughter, I believe in a good future for you and your children. Let us try to continue our hard work and I believe that we shall make a change and we shall get a deserved recognition.

I would like to take the opportunity to thank Fahmida for her effort to keep our Newsletter running, and Dawn for the List Mailing. And since we started a new year, I wish all the best to you and your families.

Bozenna

I invited Suzanne Lenhart to share with us the information about her recent activities.

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3. From Suzanne Lenhart:

From Suzanne Lenhart, the Program Director of the SIAM Group on Control and a member of the SIAM Council, who is now very involved in organizing the AWM activities at the SIAM Annual Meeting in Kansas City, July,1996.

Minisymposium: Presenting Your Work and Yourself to the World: A Focus on Oral Communications
Organizer: Rosemary E. Chang
Speakers: TBD

Abstract

One key to success in academe and industry is a person's ability to communicate with those around her. The relevance of excellent technical work must be actively revealed and not left to others. A mathematician enhances her technical achievement by developing additional

organizational talents such as public speaking. A successful mathematician must be able to communicate in both informal and formal settings.

This workshop will focus on how to develop the speaking skills and prepare for technical presentations that can be given comfortably and with confidence.

The intended audience are graduate students or recent graduates who are at the beginning of their careers. The technical content will be assumed and will not be discussed. Speakers will discuss the construction of a presentation, preparation of the slides, as well as practical tips.

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Minisymposium: Inverse Problems
Organizer: Changmei Liu<BR< to="one" University of North Carolina
email: liu@math.unc.edu

Abstract

Inverse problems arise in many areas of applications such as electric impedance tomography, elastic impedance tomography, material science, seismology, radar, sonar and medical imaging. These problems are broadly divided into various classes, for example, inverse boundary value problems, inverse spectral problems and inverse scattering problems. In one class of problems, one or more coefficients in a differential equation or a number of matrix entries in a finite dimensional problem are unknown. Each of these unknowns may represent the electric conductivity of a medium (inhomogeneous or random), the density of a material, the stiffness of a material, the sound speed in a medium and so on. In another class of problems, scattering objects are unknown. The inverse problems are to recover the unknown parameters or the shape of obstacles from boundary measurements, the spectrum of a related operator or the far field data.

Many scientists, engineers and mathematicians have studied a variety of inverse problems and have successfully obtained some very satisfactory results. A primary goal of the minisymposium is to bring together women inverse problem enthusiasts from a variety of mathematical disciplines. The minisymposium will be focused on a number of open problems in the versatile areas and there will be four talks on various specific inverse problems.

Minisymposium: Applications of Control Theory
Organizers:Mary Ann Horn, Vanderbilt University,
and Suzanne Lenhart, University of Tennessee

Abstract

"Control theory" involves inducing a desired behavior on a physical system. Questions that arise range from the stabilization of plates, beams and shells to improving communications protocols for data transmission. These talks will consider a variety of problems which may be modelled by partial differential equations, ordinary differential equations or discrete event systems. Recent theoretical developments as well as resulting applications to real-world problems will be discussed.

Speakers: To be determined
email Lenhart: lenhart@math.utk.edu

Minisymposium: Geometric Methods in Dynamical Systems
Organizer: Kathy Alligood
George Mason University
email: alligood@osf1.gmu.edu

Abstract

Poincare introduced mathematicians and physicists to the power of qualitative techniques in the study of nonlinear dynamical systems. Differential geometry, differential and algebraic topology, and continuum theory are important tools in understanding the elements of modern dynamical systems theory. The availability of interactive dynamics software now allows scientists in virtually all fields to identify the complex structures described by topologists and geometers in models within their own specialties. Recent theoretical results in the geometric or topological aspects of nonlinear dynamics will be presented in this minisymposium.

There will also be two luncheons with panel discussions-- the first on "balancing career and family" advice and the second on funding opportunities. There will be a workshop dinner on Monday with speaker, Bozenna Pasik-Duncan of University of Kansas.

Suzanne
