Preface

The sixth International Chemical Process Control meeting (CPC VI) was held January 7–12, 2001 at the Westward Look Resort in Tucson, Arizona. The uniqueness of the CPC meeting series in the process control community is illustrated by the following features: the meetings are held at five year intervals, all talks are invited and are organized in a single track so the entire audience can attend each presentation, and most importantly, a significant fraction of the audience, usually more than half, is comprised of leaders from the chemical process industries.

The overall goal of the CPC conference series is to evaluate the current progress in this field and identify the new intellectual challenges and frontiers that may have fundamental impact on future industrial practice.

At CPC VI, of the 135 registered attendees, about 65 were from the chemical process industries, and the rest were from universities and federal agencies.

The program consisted of the following technical sessions with session organizers in parenthesis.

- Opening Session (J. Brian Froisy)
- Modeling and Identification (Jay H. Lee)
- Life Sciences (Francis J. Doyle)
- Control Theory (Frank Allgower)
- Hybrid Systems (Manfred Morari)
- Controller Performance Monitoring and Maintenance (Derrick J. Kozub)
- Chemical Reactors/Separators (Lorenz T. Biegler and B. Wayne Bequette)
- Modeling and Control of Complex Products (Babatunde A. Ogunnaike)
- Contributed Paper Poster Session (Kenneth R. Muske)
- Closing Session (James B. Rawlings)

The meeting also included a Vendor and Software Display organized by S. Joe Qin.

A detailed meeting summary has been compiled including graphical representation of detailed pre-session and post-session evaluations. This summary is is available at the meeting website:

`http://www.che.wisc.edu/cpc-6`

Finally, we should attempt to draw conclusions from the meeting. These are the editors' opinions, but are informed by the week long CPC VI meeting discussions.

The chemical process control community (indeed the entire chemical engineering profession) is going through a transition period, in which the industries served by the chemical engineering profession are diversifying. During this period, it is essential that process control researchers continue to identify new opportunities in which applications of systems theory concepts provide significant added value. These proceedings document that the younger researchers in the community are already engaged in vigorous efforts to build significant collaborations to support these new application areas. Those activities portend well for the future health of this research community. Several people noted that discussions at previous CPCs were marked by more conflict than those at CPC VI, and one explanation seems to be that we have been extremely successful in bringing the best advanced control concepts and methods into practice during this short time period. We should not become victims of this success, but must embrace both the controversial new ideas, as well as the critical evaluation of these ideas, as we create the concepts that will sparkle at future CPC meetings.

Secondly, it seems timely to return to and embrace the broad meaning of systems theory and the tools it brings to chemical process modeling, dynamics and control. The significant distinction in systems engineering is whether we address the online challenge—using data and models for best real time operations decisions, or whether we address the offline challenge—to synthesize and design the new products and the new processes. Other less vital distinctions and categories that have grown up over the years do not serve us well in the current climate, because they dilute rather than deepen our focus.

Finally, as representatives of the chemical engineering profession with some of the closest connections to applications and technology, this community has a unique opportunity to play a leadership role in identifying the significant new directions in areas such as: computing tools, information processing, and measurement technologies, to name just three areas in which we are all experts. Given the rapid pace of technological change, the chemical engineering profession needs people who can distinguish the fundamental changes that present new opportunities from the blinding array of incremental and ephemeral changes. This community should embrace the challenge of providing that leadership. We have the knowledge, the tools, the experience, the vision and the people to play a key role.

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