

## News

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*Preliminary Announcement and Call for Papers*

**Computer-Intensive Methods in Control and Signal Processing**  
**Can We Beat the Curse of Dimensionality?**

The IEEE European Workshop on *Computer-Intensive Methods in Control and Signal Processing* will be organized on September 7-9, 1994 in Prague, the Czech Republic by the Institute of Information Theory and Automation, Academy of Sciences of the Czech Republic and the School of Engineering & Information Sciences, University of Reading, UK.

The aim of this IEEE Workshop is to bring together researchers and practitioners working in Academy, Government and industry. Particular emphasis will be placed on the "curse of dimensionality", i.e. the extreme dimensionality of computations related to the practical implementation of theoretically optimal mathematical procedures of inference and decision making.

It is a serious obstacle in a variety of fields such as control, signal processing, image reconstruction, pattern recognition, nonparametric estimation, expert systems etc. The "curse of dimensionality" has often been cured by *ad hoc* simplifications at the cost of losing a lot from the theoretical properties of the optimal solution. Recent progress in attacking high-dimensional problems in the above mentioned fields makes us believe that it is the right time to think of picking up widely applicable principles and methods of handling or at least approaching the problem. The key idea of the Workshop is that the problem is common to a number of different disciplines such as control theory, mathematical statistics, system identification, information theory, statistical mechanics, artificial intelligence (to name a few), and that we can and we should learn from each other.

Because of the strongly inter-disciplinary character of the Workshop, we plan to give a considerable space to invited lectures by leading specialists in various fields. The Workshop will further include several sessions of contributed papers, poster sessions and computer demonstrations.

Typical topics include

- Parallel algorithms and architectures
- Neural nets
- Model reduction
- Finite-dimensional estimation, filtering and control
- Complexity
- Multivariate integration and optimization
- Non-traditional approaches

The working language of the Workshop is English. The estimated fee is CHF 250,-.

The prospective authors should submit 3 copies of the extended abstract of their contributions by January 31, 1994, preferably in the LaTeX form.

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