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Computer-intensive methods in control and signal processing. Can we beat the curse of dimensionality?

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**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 September 7–9, 1994, in Prague, 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 as well as practitioners. 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 etc., and that we can and should learn from each other.

Typical topics include: Parallel algorithms and architectures, neural nets, finite-dimensional estimation, filtering and control, complexity, multivariate integration and optimization, non-traditional approaches.

Working language: English, estimated fee is CHF 250,-. The deadline for 3 copies of the extended abstract: 31 January 1994.

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