FOREWORD

The papers in this special issue were originally presented at "The 4th International Biennial Seminar on Intelligent Measuring System Design", sponsored by the IEEE Instrumentation and Measurement Society and the IEEE Hungary Section (Region 8), and organized by the Department of Measurement and Instrument Engineering, Technical University of Budapest, between July 3–5, 1992.

The papers published are the thoroughly revised, improved and occasionally shortened versions of the Seminar contributions.

The contributions of these two issues can be classified into five groups.

The first two papers focus on theory and application of spectral analysis. The paper of THOMÄ can be considered as a tutorial on spectral correlation measurements, while HUCKER investigates the applicability of Wigner Distribution in the spectral analysis of ultrasonic wave measurements.

The next three papers deal with identification problems. The contribution of CARBONE et al discusses the features of fast least squares algorithms with different recursive updating. SCHOUKENS et al introduce a non-parametric method which is used to compensate certain nonlinear effects of the systems to be identified. The paper of KEULERS deals with the hot topic of structure "identification" in the case of highly non-linear systems.

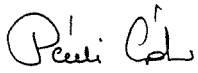
Special signal processing methods are presented in the next two contributions. PATAKI deals with such adaptive filters where coefficient adaptations are performed by a neural network. The paper of KISS and NAGY suggests a new method for interpolation in the case irrational sampling frequencies.

The fourth group of the papers covers topics strongly related to specific applications. WOERDEN et al report a research on application driven signal processing and control architectures. Their key effort is mapping algorithms on hardware architectures. JOBBÁGY and FURNÉE present a new estimation algorithm for marker-based motion analysis problems where non-contact measurement methods are applied. The paper of DOSTERT reports on an interesting signal transmission system, based on the power lines as a local area network. The first experiments show that the proposed so-

lution is cost-effective for factory and building automation. KERESE et al describe an intelligent supervisory system developed for large microwave telecommunication networks.

The last three papers focus on testability and test generation issues. UBAR and KUCHCINSKI deal with algorithms of functional level testability, related to digital circuits. HEGEDÜS reports on a systematic comparison of different test pattern generation methods, and finally TILLY et al introduce the concept of automatic test generation based on constraints.

We strongly hope that in the year 1994 we will be able to organize our next Seminar, and meet again, old and new friends, and discuss what progress time brought into our field of common interest.



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