

Adaptive Signal Processing

Simon Haykin

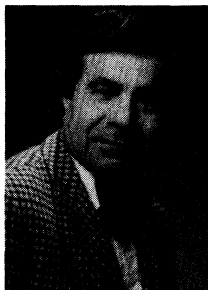
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Adaptive signal processing has emerged as an important part of the ever-expanding field of signal processing. By “adaptive” we mean the ability of a system to respond to statistical variations in the environment in which the system is embedded in such a way that system performance is improved. This special section of *Optical Engineering* is devoted to some specific aspects of adaptive signal processing.

Eleven papers are included in this special section, covering three different aspects of the subject: linear adaptive filtering, blind deconvolution, and wavelets.

The papers by Regalia, Slock, and Syed and Mathews make up the linear adaptive filtering section. The blind deconvolution section includes papers by Hatzinakos; Kennedy and Ding; Chen, Nikias, and Proakis; Giridhar, Shynk, and Iltis; and Ghosh and Weber. The third section on wavelets includes an overview paper by Resnikoff and the papers by Balart and Mann and Haykin.

Several of the papers in this special section were presented at the SPIE conference on Adaptive Signal Processing held at San Diego, July 1991, which I had the honor of chairing. These papers have been reviewed by experts in the field and revised accordingly. I would like to thank all of the contributors to this special section for their individual efforts and cooperation that have made its publication possible. I am grateful to the many reviewers for their diligence and kind help.



Simon Haykin received his BSc (first class honors) in 1953, his PhD in 1956, and his DSc in 1967, all in electrical engineering, from the University of Birmingham, England. In 1980 he was elected Fellow of the Royal Society of Canada. He was awarded the McNaughton Gold Medal, IEEE (Region 7) in 1986 and is a Fellow of the IEEE. Haykin is the

founding director of the Communications Research Laboratory and professor of electrical and computer engineering at McMaster University, Hamilton, Ontario. His research interests include neural networks, adaptive filters, and multidimensional signal processing with applications to radar.