

AVAILABLE

LITERATURE

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SIGNAL PROCESSING NOISE by Vyacheslav P. Tuzlukov, CRC Press, Boca Raton, FL, 652 pages, 2002, \$129.95, ISBN: 0-8493-1025-3.

The author presents much of his own research in this book on processing of signals with additive and multiplicative noise. This noise can significantly limit the potential of complex signal processing systems, especially when those systems use signals with complex phase structure.

The book sets forth a generalized approach to signal processing in the presence of multiplicative and additive noise that represents an advance in signal processing and detection theory. This approach extends the limits of the noise immunity set by classical and modern signal processing theories. Systems constructed on this basis achieve better detection performance than that of systems currently in use. Addressing a fundamental problem in complex signal processing systems, this book offers a theoretical development for raising noise immunity in various applications, but mainly on signal detection.

Readers who are not experts in advanced DSP will find this a difficult book. This is addressed by the author himself when he states: "To better understand the fundamental statements and concepts..., the reader should consult my two earlier books." The novice DSP engineer should acquire the necessary background to fully benefit from this text.

This work, while containing almost 700 pages, is definitely too concise to be a first text on this topic, but it is a good supplementary text for knowledgeable readers who are involved in the topic. A second difficulty with it is that the author refers sometimes in one sentence to 45 journal papers, of

which many are in Russian. Furthermore, there are quite a number of misspellings of names like Hancel and Crammer for Hankel and Cramér, respectively; and errors in the bibliographic data in the references. Few audio engineers will fully benefit from the theories explained in this book.

Ronald M. Aarts
The Netherlands

IN BRIEF AND OF INTEREST...

The Life and Works of Alan Dower Blumlein: The Inventor of Stereo by Robert Charles Alexander (Focal Press), 2000, explores the fascinating career of the man known as "the inventor of stereo."

Blumlein was born in 1903 and demonstrated an early proclivity for academics and engineering. He attended Imperial College in London and in 1924, after graduating, joined International Western Electric, launching his career as an engineer. Over the course of the next several years Blumlein worked on various projects related to telephony and telegraphy. When he joined the Gramophone Company, he helped devise one of his key inventions, a method of recording 2-channel audio in a single phonograph groove. Many of these features would later be used in the stereo records introduced in the late 1950s.

By the early 1930s, Blumlein was working with the British firm EMI toward establishing electronic television standards, and he helped in the creation of a new high-definition (for the time) TV system. With the coming of World War II, however, Blumlein and his colleagues at EMI were drawn toward war work. In 1942, during airborne experiments on a new type of radar set, Blumlein was killed with sev-

eral others when their airplane crashed.

In this 398-page biography, Alexander carefully documents the life of this inventor, placing his numerous contributions into the broader context of research and development in the British communications industry. The book includes illustrations, references and tables. Price is: \$29.99 (paperback). Focal Press, 225 Wildwood Avenue, Woburn, MA 01801, USA; tel: 800-366-2665, fax: 781-904-2620, Internet: www.focalpress.com.

Noise Reduction in Speech Applications by Gillian M. Davis (CRC Press), 2002, provides a comprehensive introduction to modern techniques for removing or reducing background noise from a range of speech-related applications.

Edited by Gillian Davis, the book begins with a tutorial, which provides the background material necessary to understanding system issues, digital algorithms, and their implementation. The following chapters are written by international experts and offer a practical systems approach to help readers decide whether or not digital noise reduction will solve specific problems in their own systems. A closing section explores a variety of applications and demonstrates the satisfying results that can be achieved with various noise reduction techniques.

Other features of the book include: a section on how to select the most appropriate technique for a given situation; background on digital signal processing techniques and noise in digital speech communication systems; an examination of single-channel speech enhancers, microphone arrays and echo canceller noise reduction algorithms. The price: \$129.95. CRC Press, or www.crcpress.com.