Subband Adaptive Filtering. Theory and Implementation

Description:
Subband adaptive filtering is rapidly becoming one of the most effective techniques for reducing computational complexity and improving the convergence rate of algorithms in adaptive signal processing applications. This book provides an introductory, yet extensive guide on the theory of various subband adaptive filtering techniques. For beginners, the authors discuss the basic principles that underlie the design and implementation of subband adaptive filters. For advanced readers, a comprehensive coverage of recent developments, such as multiband tap-weight adaptation, delayless architectures, and filter–bank design methods for reducing band-edge effects are included. Several analysis techniques and complexity evaluation are also introduced in this book to provide better understanding of subband adaptive filtering. This book bridges the gaps between the mixed-domain natures of subband adaptive filtering techniques and provides enough depth to the material augmented by many MATLAB® functions and examples.

Key Features:
- Acts as a timely introduction for researchers, graduate students and engineers who want to design and deploy subband adaptive filters in their research and applications.
- Bridges the gaps between two distinct domains: adaptive filter theory and multirate signal processing.
- Uses a practical approach through MATLAB®-based source programs on the accompanying CD.
- Includes more than 100 M-files, allowing readers to modify the code for different algorithms and applications and to gain more insight into the theory and concepts of subband adaptive filters.

Subband Adaptive Filtering is aimed primarily at practicing engineers, as well as senior undergraduate and graduate students. It will also be of interest to researchers, technical managers, and computer scientists.

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