ADAPTIVE FILTERS

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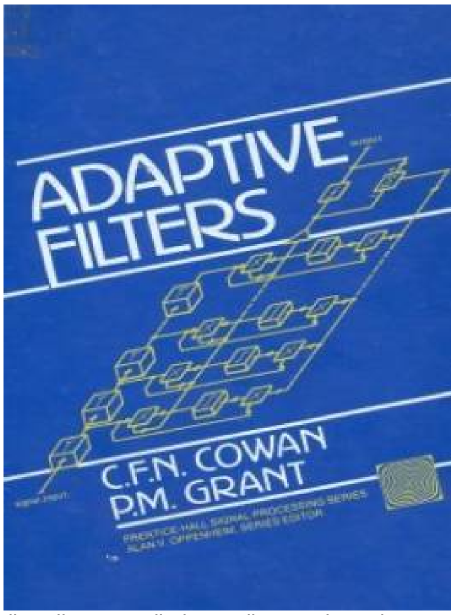
SUMMARY

In this up-to-date state of the art book, the authors provide a coherent and Comprehensive introduction to adaptive filtering. They coyer basic theory, practical realizations, and applications, such as adaptive equalizers for telecommunications data transmission systems. Practical engineers find this book a good source of information on the practical possibilities of these processors.

This book’s key features include ;

- Chapter 2 estimation theory discusses and is followed by two chapters on.
- adaptive finite impulse response and infinite impulse response.
- Chapter 5 covers the theory, design, and application of adaptive lattice filters.
- Chapter 6 deals with signal transformation techniques for adaptive filtering.
- Chapter 7 covers adaptive filter implementations.
- Chapter 8 includes main applications in communications equalization and echo cancellation



Chapter 9 describes such application areas as fast tracking filters for HF and microwave digital radion, linear predictive coding, and maximum-entropy and maximum-likelihood analysis techniques.

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The term adaptive filter implies changing the characteristic of a filter in some automated fashion to obtain the best possible signal quality in spite of changing signal/system conditions. Adaptive filters are usually associated with the broader topic of statistical signal processing. The operation of signal filtering by definition implies extracting something desired from a signal containing both desired and undesired components. 28 chapter 3. applications of adaptive filters. Echo canceller. Figure 3.11.Â Hopefully, the adapting lter will restore that property by removing the distortion or interference! Example 4.1: the Constant-Modulus Algorithm (CMA). Certain communication modulation schemes, such as PSK and FSK, transmit a sinusoid of a constant analytic magnitude. Only the frequency or phase change with time. The constant modulus algorithm tries to drive the output signal to one having a constant amplitude