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the Output Signal; 4.5 Time Domain Operations in Matrix Form; 4.6 Summary; Further Reading; Solved Problems
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6.2 Frequency Response6.3 Convolution; 6.4 Cross-Spectral and Autospectral Densities; 6.5 Filters in the Frequency Domain - Noise Control; 6.6 Determining H with Noiseless Signals (Phase Unwrapping); 6.7 Determining H with Noisy Signals (Coherence); 6.8 Summary; Further Reading and References; Solved Problems; Additional Problems; 7 Time Variation and Nonlinearity; 7.1 Nonstationary Signals: Implications; 7.2 Nonstationary Signals: Instantaneous Parameters; 7.3 Nonstationary Signals: Time Windows; 7.4 Nonstationary Signals: Frequency Windows; 7.5 Nonstationary Signals: Wavelet Analysis
7.6 Nonlinear Systems: Detecting Nonlinearity7.7 Nonlinear Systems: Response to Different Excitations; 7.8 Time-Varying Systems; 7.9 Summary; Further Reading and References; Solved Problems; Additional Problems; 8 Concepts in Discrete Inverse Problems; 8.1 Inverse Problems - Discrete Formulation; 8.2 Linearization of Nonlinear Problems; 8.3 Data-Driven Solution - Error Norms; 8.4 Model Selection - Ockham's Razor; 8.5 Information; 8.6 Data and Model Errors; 8.7 Nonconvex Error Surfaces; 8.8 Discussion on Inverse Problems; 8.9 Summary; Further Reading and References; Solved Problems
Additional Problems

Sommario/riassunto

Discrete Signals and Inverse Problems examines fundamental concepts necessary to engineers and scientists working with discrete signal processing and inverse problem solving, and places emphasis on the clear understanding of algorithms within the context of application needs. Based on the original 'Introduction to Discrete Signals and Inverse Problems in Civil Engineering', this expanded and enriched version:combines discrete signal processing and inverse problem solving in one bookcovers the most versatile tools that are needed to process engineering and scient