1. Record Nr. UNINA9910876970703321

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Titolo	Discrete signals and inverse problems : an introduction for engineers and scientists / / J. Carlos Santamarina, Dante Fratta
Pubbl/distr/stampa	Hoboken, NJ, : Wiley, c2005
ISBN	1-280-28754-3 9786610287543 0-470-02189-6 0-470-02188-8
Descrizione fisica	1 online resource (366 p.)
Altri autori (Persone)	FrattaDante
Disciplina	621.382/2
Soggetti	Civil engineering - Mathematics Signal processing - Mathematics Inverse problems (Differential equations)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Contents; Preface; Brief Comments on Notation; 1 Introduction; 1.1 Signals, Systems, and Problems; 1.2 Signals and Signal Processing - Application Examples; 1.3 Inverse Problems - Application Examples; 1.4 History - Discrete Mathematical Representation; 1.5 Summary; Solved Problems; Additional Problems; 2 Mathematical Concepts; 2.1 Complex Numbers and Exponential Functions; 2.2 Matrix Algebra; 2.3 Derivatives - Constrained Optimization; 2.4 Summary; Further Reading; Solved Problems; Additional Problems; 3 Signals and Systems; 3.1 Signals: Types and Characteristics 3.2 Implications of Digitization - Aliasing3.3 Elemental Signals and Other Important Signals; 3.4 Signal Analysis with Elemental Signals; 3.5 Systems: Characteristics and Properties; 3.6 Combination of Systems; 3.7 Summary; Further Reading; Solved Problems; Additional Problems; 4 Time Domain Analyses of Signals and Systems; 4.1 Signals and Noise; 4.2 Cross- and Autocorrelation: Identifying Similarities; 4.3 The Impulse Response - System Identification; 4.4 Convolution: Computing 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