1.	Record Nr.	UNINA9911007080403321
	Autore	Anderson Brian D. O
	Titolo	Optimal Filtering
	Pubbl/distr/stampa	Newburyport, : Dover Publications, 2012
	ISBN	0-486-13689-2
		1-62198-604-7
	Edizione	[1st ed.]
	Descrizione fisica	1 online resource (695 p.)
	Collana	Dover Books on Electrical Engineering
	Altri autori (Persone)	MooreJohn B
	Disciplina	621.382/2
	Soggetti	Signal processing
		Electric filters
		Electrical & Computer Engineering
		Engineering & Applied Sciences
		Telecommunications
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Description based upon print version of record.
	Nota di contenuto	Title Page; Copyright Page; Table of Contents; PREFACE; CHAPTER 1 - INTRODUCTION; 1.1 FILTERING; 1.2 HISTORY OF SIGNAL FILTERING; 1.3 SUBJECT MATTER OF THIS BOOK; 1.4 OUTLINE OF THE BOOK; REFERENCES; CHAPTER 2 - FILTERING, LINEAR SYSTEMS, AND ESTIMATION; 2.1 SYSTEMS, NOISE, FILTERING, SMOOTHING, AND PREDICTION; 2.2 THE GAUSS-MARKOV DISCRETE-TIME MODEL; 2.3 ESTIMATION CRITERIA; REFERENCES; CHAPTER 3 - THE DISCRETE-TIME; 3.1 THE KALMAN FILTER; 3.2 BEST LINEAR ESTIMATOR PROPERTY OF THE KALMAN FILTER; 3.3 IDENTIFICATION AS A KALMAN FILTERING PROBLEM; 3.4 APPLICATION OF KALMAN FILTERS; REFERENCES CHAPTER 4 - TIME-INVARIANT FILTERS4.1 BACKGROUND TO TIME INVARIANCE OF THE FILTER; 4.2 STABILITY PROPERTIES OF LINEAR, DISCRETE-TIME SYSTEMS; 4.3 STATIONARY BEHAVIOUR OF LINEAR SYSTEMS; 4.4 TIME INVARIANCE AND ASYMPTOTIC STABILITY OF THE FILTER; 4.5 FREQUENCY DOMAIN FORMULAS; REFERENCES; CHAPTER 5 - KALMAN FILTER PROPERTIES; 5.1 INTRODUCTION; 5.2 MINIMUM VARIANCE AND LINEAR MINIMUM VARIANCE ESTIMATION; ORTHOGONALITY AND PROJECTION; 5.3 THE INNOVATIONS SEQUENCE; 5.4 THE KALMAN FILTER; 5.5 TRUE FILTERED ESTIMATES AND THE

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5.6 INVERSE PROBLEMS: WHEN IS A FILTER OPTIMAL?REFERENCES; CHAPTER 6 - COMPUTATIONAL ASPECTS; 6.1 SIGNAL MODEL ERRORS, FILTER DIVERGENCE, AND DATA SATURATION; 6.2 EXPONENTIAL DATA WEIGHTING-A FILTER WITH PRESCRIBED DEGREE OF STABILITY; 6.3 THE MATRIX INVERSION LEMMA AND THE INFORMATION FILTER; 6.4 SEQUENTIAL PROCESSING; 6.5 SQUARE ROOT FILTERING; 6.6 THE HIGH MEASUREMENT NOISE CASE; 6.7 CHANDRASEKHAR-TYPE, DOUBLING, AND NONRECURSIVE ALGORITHMS; REFERENCES; CHAPTER 7 - SMOOTHING OF DISCRETE-TIME SIGNALS; 7.1 INTRODUCTION TO SMOOTHING; 7.2 FIXED-POINT SMOOTHING; 7.3 FIXED-LAG SMOOTHING

7.4 FIXED-INTERVAL SMOOTHINGREFERENCES; CHAPTER 8 - APPLICATIONS IN NONLINEAR FILTERING; 8.1 NONLINEAR FILTERING; 8.2 THE EXTENDED KALMAN FILTER; 8.3 A BOUND OPTIMAL FILTER; 8.4 GAUSSIAN SUM ESTIMATORS; REFERENCES; CHAPTER 9 - INNOVATIONS REPRESENTATIONS, SPECTRAL FACTORIZATION, WIENER AND LEVINSON FILTERING; 9.1 INTRODUCTION; 9.2 KALMAN FILTER DESIGN FROM COVARIANCE DATA; 9.3 INNOVATIONS REPRESENTATIONS WITH FINITE INITIAL TIME; 9.4 STATIONARY INNOVATIONS REPRESENTATIONS AND SPECTRAL FACTORIZATION; 9.5 WIENER FILTERING; 9.6 LEVINSON FILTERS; REFERENCES

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APPENDIX B - BRIEF REVIEW OF SOME RESULTS OF MATRIX THEORY

| Sommario/riassunto | This graduate-level text augments and extends beyond undergraduate studies of signal processing, particularly in regard to communication systems and digital filtering theory. Vital for students in the fields of control and communications, its contents are also relevant to students in such diverse areas as statistics, economics, bioengineering, and operations research.Topics include filtering, linear systems, and estimation; the discrete-time Kalman filter; time-invariant filters; properties of Kalman filters; computational aspects; and smoothing of discrete-time signals. Additional subjects e |