1. Record Nr. UNINA9910254586603321

Autore	Chui Charles K
Titolo	Kalman Filtering : with Real-Time Applications / / by Charles K. Chui, Guanrong Chen
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017
ISBN	3-319-47612-2
Edizione	[5th ed. 2017.]
Descrizione fisica	1 online resource (XVIII, 247 p. 34 illus.)
Disciplina	515
Soggetti	Physics Economic theory Applied mathematics Engineering mathematics Electrical engineering Artificial intelligence Mathematical Methods in Physics Numerical and Computational Physics, Simulation Economic Theory/Quantitative Economics/Mathematical Methods Mathematical and Computational Engineering Communications Engineering, Networks Artificial Intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Preliminaries -- Kalman Filter: An Elementary Approach -- Orthogonal Projection and Kalman Filter -- Correlated System and Measurement Noise Processes -- Colored Noise -- Limiting Kalman Filter -- Sequential and Square-Root Algorithms -- Extended Kalman Filter and System Identification -- Decoupling of Filtering Equations -- Kalman Filtering for Interval Systems -- Wavelet Kalman Filtering -- Distributed Estimation on Sensor Networks -- Notes -- Answers and Hints to Exercises.
Sommario/riassunto	This new edition presents a thorough discussion of the mathematical theory and computational schemes of Kalman filtering. The filtering

algorithms are derived via different approaches, including a direct method consisting of a series of elementary steps, and an indirect method based on innovation projection. Other topics include Kalman filtering for systems with correlated noise or colored noise, limiting Kalman filtering for time-invariant systems, extended Kalman filtering for nonlinear systems, interval Kalman filtering for uncertain systems, and wavelet Kalman filtering for multiresolution analysis of random signals. Most filtering algorithms are illustrated by using simplified radar tracking examples. The style of the book is informal, and the mathematics is elementary but rigorous. The text is self-contained, suitable for self-study, and accessible to all readers with a minimum knowledge of linear algebra, probability theory, and system engineering. Over 100 exercises and problems with solutions help deepen the knowledge. This new edition has a new chapter on filtering communication networks and data processing, together with new exercises and new real-time applications.