Record Nr. UNINA9910453281003321 Autore Xiong Jie **Titolo** An introduction to stochastic filtering theory [[electronic resource] /] / Jie Xiong Oxford;; New York,: Oxford University Press, 2008 Pubbl/distr/stampa **ISBN** 1-281-82550-6 9786611825508 0-19-155139-2 Descrizione fisica 1 online resource (285 p.) Collana Oxford graduate texts in mathematics;; 18 Disciplina 519.2/3 Soggetti Stochastic processes Filters (Mathematics) Prediction theory Electronic books. 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 (p. [255]-265) and index. Contents: 1 Introduction: 2 Brownian motion and martingales: 3 Nota di contenuto Stochastic integrals and Ito's formula: 4 Stochastic differential equations; 5 Filtering model and Kallianpur-Striebel formula; 6 Uniqueness of the solution for Zakai's equation: 7 Uniqueness of the solution for the filtering equation; 8 Numerical methods; 9 Linear filtering; 10 Stability of non-linear filtering; 11 Singular filtering; Bibliography; List of Notations; Index Sommario/riassunto Stochastic filtering theory is a field that has seen a rapid development in recent years and this book, aimed at graduates and researchers in applied mathematics, provides an accessible introduction covering recent developments. -; Stochastic Filtering Theory uses probability tools to estimate unobservable stochastic processes that arise in many applied fields including communication, target-tracking, and mathematical finance. As a topic, Stochastic Filtering Theory has progressed rapidly in recent years. For example, the (branching) particle system representation of the optimal filter has bee