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Autore	Xiong Jie
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Nota di bibliografia	Includes bibliographical references (p. [255]-265) and index.
Nota di contenuto	Contents; 1 Introduction; 2 Brownian motion and martingales; 3 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