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Sommario/riassunto	Focusing on research surrounding aspects of insufficiently studied problems of estimation and optimal control of random fields, this book exposes some important aspects of those fields for systems modeled by stochastic partial differential equations. It contains many results of interest to specialists in both the theory of random fields and optimal control theory who use modern mathematical tools for resolving specific applied problems, and presents research that has not previously been covered. More generally, this book is intended for scientists, graduate, and post-graduates specializing in probability theory and mathematical statistics. The models presented describe many processes in turbulence theory, fluid mechanics, hydrology, astronomy, and meteorology, and are widely used in pattern recognition theory and parameter identification of stochastic systems. Therefore, this book may also be useful to applied mathematicians who use probability and statistical methods in the selection of useful signals subject to noise, hypothesis distinguishing, distributed parameter systems optimal control, and more. Material presented in this monograph can be used for education courses on the estimation and control theory of random fields.

