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	Nota di bibliografia	Includes bibliographical references.
	Nota di contenuto	General Theory of Some Classes of 2-D Systems -- Robust Filtering of 2-D Uncertain State-Delayed Systems -- Robust Filtering of 2-D Linear Parameter-Varying Systems -- Filter Design Approach to Fault Detection of 2-D Markovian Jump Systems -- Dynamic Output Feedback Control of 2-D Linear Parameter-Varying Systems -- Sliding-Mode Control of 2-D Systems -- Model Approximation of 2-D State-Delayed Systems. Part II: A Special Class of 2-D Systems: Linear Repetitive Processes -- Robust Filtering of Differential and Discrete LRPs -- Reduced-Order Robust Filter Design for Discrete LRPs -- Filter Design Approach to Fault Detection of Discrete LRPs -- Dynamic Output Feedback Control of Differential and Discrete LRPs -- State Estimation and Quasi-Sliding-Mode Control of Differential LRPs -- Model Approximation of Differential and Discrete LRPs -- Conclusion and Further Work.
	Sommario/riassunto	This book focuses on filtering, control and model-reduction problems for two-dimensional (2-D) systems with imperfect information. The time-delayed 2-D systems covered have system parameters subject to uncertain, stochastic and parameter-varying changes. After an initial

introduction of 2-D systems and the ideas of linear repetitive processes, the text is divided into two parts detailing: ·	general theory and methods of analysis and optimal synthesis for 2-D systems; and ·	application of the general theory to the particular case of differential/discrete linear repetitive processes. The methods developed provide a framework for stability and performance analysis, optimal and robust controller and filter design and model approximation for the systems considered. Solutions to the design problems are couched in terms of linear matrix inequalities. For readers interested in the state of the art in linear filtering, control and model reduction, Filtering and Control for Classes of Two-Dimensional Systems will be a useful reference for exploring the field of 2-D systems either from a purely theoretical research perspective or from the point of view of a multitude of potential applications including image processing, and the study of seismographic data or thermal processes.