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Soggetti	Statistics Econometrics Computer software Statistics and Computing/Statistics Programs Statistics for Social Sciences, Humanities, Law Mathematical Software Statistics for Business, Management, Economics, Finance, Insurance Statistics for Engineering, Physics, Computer Science, Chemistry and Earth Sciences
Lingua di pubblicazione	Inglese
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Nota di contenuto	Preface -- Software Installation -- Stationarity, VARMA and ARIMA Models -- VARMAX and Transfer Function Models -- Unobserved Components in Univariate Series -- Spectral Analysis -- Computing Echelon Forms by Polynomial Methods -- Multivariate Structural Models -- Cointegrated VARMA Models -- Simulation of Common Univariate and Multivariate Models -- The State Space Model -- SSMMATLAB Examples by Subject -- Author Index -- Subject Index.
Sommario/riassunto	This book presents an introduction to linear univariate and multivariate time series analysis, providing brief theoretical insights into each topic, and from the beginning illustrating the theory with software examples. As such, it quickly introduces readers to the peculiarities of each subject from both theoretical and the practical points of view. It also includes numerous examples and real-world applications that demonstrate how to handle different types of time series data. The

associated software package, SSMMATLAB, is written in MATLAB and also runs on the free OCTAVE platform. The book focuses on linear time series models using a state space approach, with the Kalman filter and smoother as the main tools for model estimation, prediction and signal extraction. A chapter on state space models describes these tools and provides examples of their use with general state space models. Other topics discussed in the book include ARIMA; and transfer function and structural models; as well as signal extraction using the canonical decomposition in the univariate case, and VAR, VARMA, cointegrated VARMA, VARX, VARMAX, and multivariate structural models in the multivariate case. It also addresses spectral analysis, the use of fixed filters in a model-based approach, and automatic model identification procedures for ARIMA and transfer function models in the presence of outliers, interventions, complex seasonal patterns and other effects like Easter, trading day, etc. This book is intended for both students and researchers in various fields dealing with time series. The software provides numerous automatic procedures to handle common practical situations, but at the same time, readers with programming skills can write their own programs to deal with specific problems. Although the theoretical introduction to each topic is kept to a minimum, readers can consult the companion book ‘Multivariate Time Series With Linear State Space Structure’, by the same author, if they require more details. .