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	Soggetti	Statistics Econometrics Statistical Theory and Methods Statistics in Business, Management, Economics, Finance, Insurance Statistics in Engineering, Physics, Computer Science, Chemistry and Earth Sciences
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	Nota di contenuto	Introduction -- Stationary Processes -- ARMA Models -- Spectral Analysis -- Modeling and Forecasting with ARMA Processes -- Nonstationary and Seasonal Time Series Models -- Time Series Models for Financial Data -- Multivariate Time Series -- State-Space Models -- Forecasting Techniques -- Further Topics -- Appendix A: Random Variables and Probability Distributions -- Appendix B: Statistical Complements -- Appendix C: Mean Square Convergence -- Appendix D: Lévy Processes, Brownian Motion and Itô Calculus -- Appendix E: An ITSM Tutorial -- References -- Index.
	Sommario/riassunto	This book is aimed at the reader who wishes to gain a working knowledge of time series and forecasting methods as applied to economics, engineering and the natural and social sciences. It assumes knowledge only of basic calculus, matrix algebra and elementary statistics. This third edition contains detailed instructions for the use of the professional version of the Windows-based computer package ITSM2000, now available as a free download from the Springer Extras

website. The logic and tools of time series model-building are developed in detail. Numerous exercises are included and the software can be used to analyze and forecast data sets of the user's own choosing. The book can also be used in conjunction with other time series packages such as those included in R. The programs in ITSM2000 however are menu-driven and can be used with minimal investment of time in the computational details. The core of the book covers stationary processes, ARMA and ARIMA processes, multivariate time series and state-space models, with an optional chapter on spectral analysis. Many additional special topics are also covered. New to this edition: A chapter devoted to Financial Time Series Introductions to Brownian motion, Lévy processes and Itô calculus An expanded section on continuous-time ARMA processes Peter J. Brockwell and Richard A. Davis are Fellows of the American Statistical Association and the Institute of Mathematical Statistics and elected members of the International Statistics Institute. Richard A. Davis is the current President of the Institute of Mathematical Statistics and, with W.T.M. Dunsmuir, winner of the Koopmans Prize. Professors Brockwell and Davis are coauthors of the widely used advanced text, Time Series: Theory and Methods, Second Edition (Springer-Verlag, 1991). From reviews of the first edition: < This book, like a good science fiction novel, is hard to put down.… Fascinating examples hold one's attention and are taken from an astonishing variety of topics and fields.… Given that time series forecasting is really a simple idea, it is amazing how much beautiful mathematics this book encompasses. Each chapter is richly filled with examples that serve to illustrate and reinforce the basic concepts. The exercises at the end of each chapter are well designed and make good use of numerical problems. Combined with the ITSM package, this book is ideal as a textbook for the self-study student or the introductory course student. Overall then, as a text for a university-level course or as a learning aid for an industrial forecaster, I highly recommend the book. –SIAM Review In addition to including ITSM, the book details all of the algorithms used in the package—a quality which sets this text apart from all others at this level. This is an excellent idea for at least two reasons. It gives the practitioner the opportunity to use ITSM more intelligently by providing an extra source of intuition for understanding estimation and forecasting, and it allows the more adventurous practitioners to code their own algorithms for their individual purposes.… Overall I find Introduction to Time Series and Forecasting to be a very useful and enlightening introduction to time series. –Journal of the American Statistical Association The emphasis is on hands-on experience and the friendly software that accompanies the book serves the purpose admirably.… The authors should be congratulated for making the subject accessible and fun to learn. The book is a pleasure to read and highly recommended. I regard it as the best introductory text in town. –Short Book Reviews, International Statistical Review.