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Nota di contenuto	Modeling and Forecasting Electricity Loads and Prices; Contents; Preface; Acknowledgments; 1 Complex Electricity Markets; 1.1 Liberalization; 1.2 The Marketplace; 1.2.1 Power Pools and Power Exchanges; 1.2.2 Nodal and Zonal Pricing; 1.2.3 Market Structure; 1.2.4 Traded Products; 1.3 Europe; 1.3.1 The England and Wales Electricity Market; 1.3.2 The Nordic Market; 1.3.3 Price Setting at Nord Pool; 1.3.4 Continental Europe; 1.4 North America; 1.4.1 PJM Interconnection; 1.4.2 California and the Electricity Crisis; 1.4.3 Alberta and Ontario; 1.5 Australia and New Zealand; 1.6 Summary 1.7 Further Reading 2 Stylized Facts of Electricity Loads and Prices; 2.1 Introduction; 2.2 Price Spikes; 2.2.1 Case Study: The June 1998 Cinergy Price Spike; 2.2.2 When Supply Meets Demand; 2.2.3 What is Causing the Spikes?; 2.2.4 The Definition; 2.3 Seasonality; 2.3.1 Measuring Serial Correlation; 2.3.2 Spectral Analysis and the Periodogram; 2.3.3 Case Study: Seasonal Behavior of Electricity Prices and Loads; 2.4 Seasonal Decomposition; 2.4.1 Differencing; 2.4.2 Mean or Median Week; 2.4.3 Moving Average Technique; 2.4.4 Annual Seasonality and Spectral Decomposition 2.4.5 Rolling Volatility Technique 2.4.6 Case Study: Rolling Volatility in

Practice; 2.4.7 Wavelet Decomposition; 2.4.8 Case Study: Wavelet Filtering of Nord Pool Hourly System Prices; 2.5 Mean Reversion; 2.5.1 R/S Analysis; 2.5.2 Detrended Fluctuation Analysis; 2.5.3 Periodogram Regression; 2.5.4 Average Wavelet Coefficient; 2.5.5 Case Study: Antipersistence of Electricity Prices; 2.6 Distributions of Electricity Prices; 2.6.1 Stable Distributions; 2.6.2 Hyperbolic Distributions; 2.6.3 Case Study: Distribution of EEX Spot Prices; 2.6.4 Further Empirical Evidence and Possible Applications
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4.3.6 Autoregressive GARCH Models

Sommario/riassunto

This book offers an in-depth and up-to-date review of different statistical tools that can be used to analyze and forecast the dynamics of two crucial for every energy company processes—electricity prices and loads. It provides coverage of seasonal decomposition, mean reversion, heavy-tailed distributions, exponential smoothing, spike preprocessing, autoregressive time series including models with exogenous variables and heteroskedastic (GARCH) components, regime-switching models, interval forecasts, jump-diffusion models, derivatives pricing and the market price of risk. Modeling and Foreca
