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Spectral Decomposition

2.4.5 Rolling Volatility Technique2.4.6 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: Anti-persistence 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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3.4.7 Case Study: Modeling Daily Loads in California3.4.8 Autoregressive Integrated Moving Average Model; 3.4.9 Time Series Models with Exogenous Variables; 3.4.10 Case Study: Modeling Daily Loads in California with Exogenous Variables; 3.5 Summary; 3.6 Further Reading; 4 Modeling and Forecasting Electricity Prices; 4.1 Introduction; 4.2 Overview of Modeling Approaches; 4.3 Statistical Methods and Price Forecasting; 4.3.1 Exogenous Factors; 4.3.2 Spike Preprocessing; 4.3.3 How to Assess the Quality of Price Forecasts; 4.3.4 ARMA-type Models; 4.3.5 Time Series Models with Exogenous Variables

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