Discrete-valued time series are common in practice, yet methods for their analysis have been developed only recently. The fact that the variables take values on a finite or countably infinite set renders the traditional representations of dependence either impossible or impractical. Several models for stationary processes with discrete marginal distributions have been proposed. The first part of this book is concerned with the statistical inference (parameter estimation and order selection) of the INteger-valued AutoRegressive, INAR(p), process, both in the context of a single and of replicated time series. The second part of the book is focused on Walsh-Fourier spectral analysis (WFA), which is a procedure used to analyze time series when sharp discontinuities and changes of level occur in data. Considering that during the surgical intervention a patient attains different levels of neuromuscular blockade, the contribution of WFA to the design of an on-line adaptive control system for neuromuscular blockade is investigated. Thus, the book should be useful either to researchers or to users interested in count time series or spectral analysis using square waveforms.

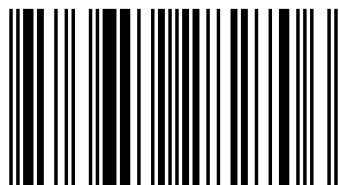Analysis of discrete-valued time series

Isabel Silva

# Analysis of discrete-valued time series

## Some contributions

**Isabel Silva**

Isabel Silva was born in Caracas, Venezuela. She got her Ph.D. in Applied Mathematics from Faculty of Science, University of Porto (UP), Portugal. She is currently an Assistant Professor at Faculty of Engineering UP. Her scientific interests are in the area of Time Series Analysis, particularly, univariate and multivariate time series of counts.

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