1.	Record Nr.	UNINA9910877046303321
	Autore	Bloomfield Peter <1946->
	Titolo	Fourier analysis of time series [[electronic resource]] : an introduction / / Peter Bloomfield
	Pubbl/distr/stampa	New York, : Wiley, c2000
	ISBN	1-280-54195-4 9786610541959 0-471-65399-3 0-471-72223-5
	Edizione	[2nd ed.]
	Descrizione fisica	1 online resource (285 p.)
	Collana	Wiley series in probability and statistics. Applied probability and statistics section
	Disciplina	515.2433 519.5/5 519.55
	Soggetti	Time-series analysis Fourier analysis
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	"A Wiley-Interscience publication."
	Nota di bibliografia	Includes bibliographical references (p. 247-254) and indexes.
	Nota di contenuto	Contents; 1 Introduction; 1.1 Fourier Analysis; 1.2 Historical Development of Fourier Methods; 1.3 Why Use Trigonometric Functions?; 2 Fitting Sinusoids; 2.1 Curve-Fitting Approach; 2.2 Least Squares Fitting of Sinusoids; 2.3 Multiple Periodicities; 2.4 Orthogonality of Sinusoids; 2.5 Effect of Discrete Time: Aliasing; 2.6 Some Statistical Results; Appendix; 3 The Search for Periodicity; 3.1 Fitting the Frequency; 3.2 Fitting Multiple Frequencies; 3.3 Some More Statistical Results; Appendix; 4 Harmonic Analysis; 4.1 Fourier Frequencies; 4.2 Discrete Fourier Transform 4.3 Decomposing the Sum of Squares4.4 Special Functions; 4.5 Smooth Functions; 5 The Fast Fourier Transform; 5.1 Computational Cost of Fourier Transforms; 5.2 Two-Factor Case; 5.3 Application to Harmonic Analysis of Data; 6 Examples of Harmonic Analysis; 6.1 Variable Star Data; 6.2 Leakage Reduction by Data Windows; 6.3 Tapering the Variable Star Data; 6.4 Wolf's Sunspot Numbers; 6.5 Nonsinusoidal Oscillations; 6.6 Amplitude and Phase Fluctuations; 6.7

| Sommario/riassunto | A new, revised edition of a yet unrivaled work on frequency domain analysis Long recognized for his unique focus on frequency domain methods for the analysis of time series data as well as for his applied, easy-to-understand approach, Peter Bloomfield brings his well-known 1976 work thoroughly up to date. With a minimum of mathematics and an engaging, highly rewarding style, Bloomfield provides in-depth discussions of harmonic regression, harmonic analysis, complex demodulation, and spectrum analysis. All methods are clearly illustrated using examples of specific data sets, while ampl |