

1. Record Nr.	UNINA9910300249703321
Autore	Gomes Jonas
Titolo	From Fourier Analysis to Wavelets / / by Jonas Gomes, Luiz Velho
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
ISBN	3-319-22075-6
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (216 p.)
Collana	IMPA Monographs ; ; 3
Disciplina	510
Soggetti	Fourier analysis Harmonic analysis Signal processing Fourier Analysis Abstract Harmonic Analysis Signal, Speech and Image Processing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- Function Representation and Reconstruction -- The Fourier Transform -- Windowed Fourier Transform -- The Wavelet Transform -- Multiresolution Representation -- The Fast Wavelet Transform -- Filter Banks and Multiresolution -- Constructing Wavelets -- Wavelet Design -- Orthogonal Wavelets -- Biorthogonal Wavelets -- Directions and Guidelines -- Appendices.
Sommario/riassunto	This text introduces the basic concepts of function spaces and operators, both from the continuous and discrete viewpoints. Fourier and Window Fourier Transforms are introduced and used as a guide to arrive at the concept of Wavelet transform. The fundamental aspects of multiresolution representation, and its importance to function discretization and to the construction of wavelets is also discussed. Emphasis is given on ideas and intuition, avoiding the heavy computations which are usually involved in the study of wavelets. Readers should have a basic knowledge of linear algebra, calculus, and some familiarity with complex analysis. Basic knowledge of signal and image processing is desirable. This text originated from a set of notes in Portuguese that the authors wrote for a wavelet course

on the Brazilian Mathematical Colloquium in 1997 at IMPA, Rio de Janeiro.

---