

The Evolution of Applied Harmonic Analysis

Models of the Real World

A sweeping exploration of the development and far-reaching applications of harmonic analysis such as signal processing, digital music, Fourier optics, radio astronomy, crystallography, medical imaging, spectroscopy, and more. Featuring a wealth of illustrations, examples, and material not found in other harmonic analysis books, this unique monograph skillfully blends together historical narrative with scientific exposition to create a comprehensive yet accessible work. While only an understanding of calculus is required to appreciate it, there are more technical sections that will charm even specialists in harmonic analysis. From undergraduates to professional scientists, engineers, and mathematicians, there is something for everyone here.

The second edition of *The Evolution of Applied Harmonic Analysis* contains a new chapter on atmospheric physics and climate change, making it more relevant for today's audience.

Praise for the first edition:

"...can be thoroughly recommended to any reader who is curious about the physical world and the intellectual underpinnings that have lead to our expanding understanding of our physical environment and to our halting steps to control it. Everyone who uses instruments that are based on harmonic analysis will benefit from the clear verbal descriptions that are supplied."

— R.N. Bracewell, Stanford University

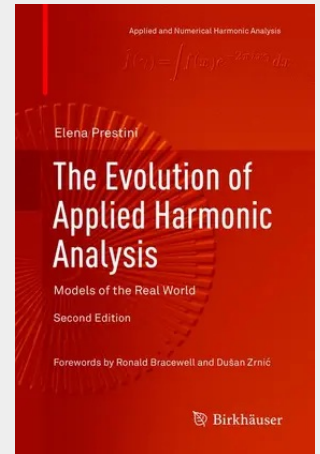
"The book under review is a unique and splendid telling of the triumphs of the fast Fourier transform. I can recommend it unconditionally... Elena Prestini... has taken one major mathematical idea, that of Fourier analysis, and chased down and described a half dozen varied areas in which Fourier analysis and the FFT are now in place. Her book is much to be applauded."

— Society for Industrial and Applied Mathematics

"This is not simply a book about mathematics, or even the history of mathematics; it is a story about how the discipline has been applied (to borrow Fourier's expression) to 'the public good and the explanation of natural phenomena.' ... This book constitutes a significant addition to the library of popular mathematical works, and a valuable resource for students of mathematics."

— Mathematical Association of America Reviews

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