

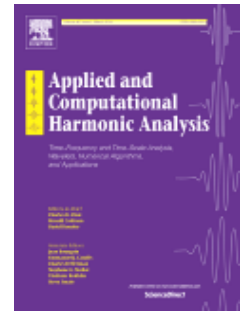


# APPLIED AND COMPUTATIONAL HARMONIC ANALYSIS

AUTHOR INFORMATION PACK

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## DESCRIPTION

*Applied and Computational Harmonic Analysis (ACHA)* is an interdisciplinary journal that publishes high-quality papers in all areas of **mathematical sciences** related to the applied and computational aspects of **harmonic analysis**, with special emphasis on innovative theoretical development, methods, and algorithms, for information processing, manipulation, understanding, and so forth. The objectives of the journal are to chronicle the important publications in the rapidly growing field of **data representation** and **analysis**, to stimulate research in relevant interdisciplinary areas, and to provide a common link among mathematical, physical, and life scientists, as well as engineers. Applied and computational harmonic analysis covers, in the broadest sense, topics that include but not limited to:

### I Signal and Function Representations

- continuous and discrete wavelet transform
- wavelet frames
- wavelet algorithms
- local time-frequency and time-scale basis functions
- multi-scale and multi-level methods
- refinable functions

### II Representation of Abstract and High-dimensional Objects

- diffusion wavelets and geometry
- harmonic analysis on graphs and trees
- sparse data representation
- compressive sampling
- compressed sensing
- matrix completion
- random matrices and projections
- data dimensionality reduction
- high-dimensional integration

### III Application Areas

- data compression
- signal and image processing
- learning theory and algorithms
- computer-aided geometric design
- extra large data analysis and understanding

- data recovery and image inpainting
- data mining
- hyperspectral imaging
- novel sensors and systems

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## AUDIENCE

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Applied mathematics, mathematical analysis, mathematical physics, and electrical engineering.

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[3] W. Strunk Jr., E.B. White, *The Elements of Style*, fourth ed., Longman, New York, 2000.

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