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Modern Fourier analysis. 3rd ed. (English) [Zbl 1304.42002](#)

[Graduate Texts in Mathematics](#) 250. New York, NY: Springer (ISBN 978-1-4939-1229-2/hbk; 978-1-4939-1230-8/ebook). xvi, 624 p. (2014).

Publisher's description: This text is addressed to graduate students in mathematics and to interested researchers who wish to acquire an in depth understanding of Euclidean Harmonic analysis. The text covers modern topics and techniques in function spaces, atomic decompositions, singular integrals of nonconvolution type, and the boundedness and convergence of Fourier series and integrals. The exposition and style are designed to stimulate further study and promote research. Historical information and references are included at the end of each chapter.

This third edition includes a new chapter entitled "Multilinear Harmonic Analysis" which focuses on topics related to multilinear operators and their applications. Sections 1.1 and 1.2 are also new in this edition. Numerous corrections have been made to the text from the previous editions and several improvements have been incorporated, such as the adoption of clear and elegant statements. A few more exercises have been added with relevant hints when necessary.

Editorial remark: See [Zbl 1158.42001](#) for a review of the second edition.

MSC:

- [42-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to harmonic analysis on Euclidean spaces
- [42B35](#) Function spaces arising in harmonic analysis
- [42B30](#) H^p -spaces
- [42B20](#) Singular and oscillatory integrals (Calderón-Zygmund, etc.)
- [42B25](#) Maximal functions, Littlewood-Paley theory
- [46E35](#) Sobolev spaces and other spaces of "smooth" functions, embedding theorems, trace theorems

Cited in **1** Review
Cited in **127** Documents

Keywords:

smoothness; Hardy spaces; Sobolev spaces; Besov spaces; Triebel-Lizorkin spaces; atomic decomposition; BMO; Carleson measures; weighted inequalities; time-frequency analysis; singular integrals

Full Text: [DOI](#)