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Autore	Bardaro Carlo
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Altri autori (Persone)	ButzerPaul L MantelliniIlaria SchmeisserGerhard
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Nota di contenuto	- 1. Preliminaries -- 2. Polar-Analytic Functions -- 3. The Foundation of Mellin Analysis -- 4. The Mellin Convolution -- 5. The Finite Mellin transform and the Mellin–Fourier Series -- 6. The Mellin Transform in X_c -- 7. The Mellin Transform in Spaces $X_{p/c}$ for $1 < p \leq 2$ -- 8. Mellin Bandlimited Functions and Paley–Wiener Theorems in Mellin Setting -- 9. Mellin Transforms and Fractional Analysis -- 10. The Mellin Distance -- 11. Mellin Transform Methods for Partial Differential Equations --

12. Exponential Sampling Theory -- 13. Generalized Exponential Sampling Theory -- 14. Applications to Quadrature over the Positive Real Axis.

Sommario/riassunto

This monograph presents the theory of the Mellin transform and the resulting Mellin analysis in a rigorous and unified manner. Often dismissed as a subordinate topic within Fourier and Laplace transform, it is instead demonstrated here that the theory is completely independent, can be studied within a self-contained framework, and exhibits some typical characteristics. In addition to highlighting the foundations of the theory, the book addresses applications to certain partial differential equations, sampling theory and numerical quadrature. These applications provide methods which are in turn of interest in various areas of mathematics, science, and engineering. Each chapter is enriched by numerous references to further literature and potential research directions. Researchers working in this field will gain new insights and appreciate the deserved attention for this underrated topic in harmonic analysis.
