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Titolo	Summability Calculus : A Comprehensive Theory of Fractional Finite Sums / / by Ibrahim M. Alabdulmohsin
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Soggetti	Number theory Functions of real variables Functions, Special Differential equations Sequences (Mathematics) Approximation theory Number Theory Real Functions Special Functions Ordinary Differential Equations Sequences, Series, Summability Approximations and Expansions
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Nota di contenuto	1 Introduction -- 2 Simple Finite Sums -- 3 Composite Finite Sums -- 4 Analytic Summability Theory -- 5 Oscillating Finite Sums -- 6 Computing Finite Sums -- 7 The Language of Finite Differences -- The Sum of the Approximation Errors of Harmonic Numbers -- Glossary -- Index.
Sommario/riassunto	This book develops the foundations of "summability calculus", which is a comprehensive theory of fractional finite sums. It fills an important gap in the literature by unifying and extending disparate historical results. It also presents new material that has not been published before. Importantly, it shows how the study of fractional finite sums

benefits from and contributes to many areas of mathematics, such as divergent series, numerical integration, approximation theory, asymptotic methods, special functions, series acceleration, Fourier analysis, the calculus of finite differences, and information theory. As such, it appeals to a wide audience of mathematicians whose interests include the study of special functions, summability theory, analytic number theory, series and sequences, approximation theory, asymptotic expansions, or numerical methods. Richly illustrated, it features chapter summaries, and includes numerous examples and exercises. The content is mostly developed from scratch using only undergraduate mathematics, such as calculus and linear algebra. .