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   Autore   Anastassiou George A. <1952->

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   Soggetti   Fractional calculus
                       Fractional differential equations
                       Control and systems theory

   Lingua di pubblicazione   Inglese

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   Nota di contenuto   Caputo -fractional Ostrowski inequalities -- Caputo -fractional Ostrowski and Gruss inequalities involving several functions -- Weighted Caputo fractional Iyengar type inequalities -- Generalized Canavati g-fractional Iyengar and Ostrowski inequalities -- Generalized Canavati g-fractional Polya inequalities -- Caputo generalized -fractional integral type inequalities -- Generalized -fractional Quantitative Approximation by Sub-linear Operators -- Generalized g–iterated fractional Quantitative Approximation by Sublinear Operators -- Generalized g–Fractional vector Representation Formula and Bochner integral type inequalities for Banach space valued functions -- Iterated g–Fractional vector Bochner integral Representation Formulae and inequalities for Banach space valued functions -- Vectorial generalized g–fractional direct and iterated Quantitative Approximation by linear operators -- Quantitative Multivariate Complex Korovkin Approximation Theory -- M-fractional integral type inequalities -- Principles of Stochastic Caputo Fractional Calculus with Fractional Approximation of Stochastic Processes -- Trigonometric Caputo Fractional Approximation of Stochastic Processes -- Trigonometric Conformable Fractional Approximation of Stochastic Processe -- Commutative Caputo Fractional Korovkin Approximation for Stochastic Processes -- Trigonometric Commutative Caputo Fractional Korovkin

Approximation for Stochastic Processes -- Commutative Conformable Fractional Korovkin Approximation for Stochastic Processes -- Trigonometric Commutative Conformable Fractional Korovkin Approximation for Stochastic Processes -- Concluding Remarks.

| Sommario/riassunto | This book deals with the quantitative fractional Korovkin type approximation of stochastic processes. Computational and fractional analysis play more and more a central role in nowadays either by themselves or because they cover a great variety of applications in the real world. The author applies generalized fractional differentiation techniques of Caputo, Canavati and Conformable types to a great variety of integral inequalities, e.g. of Ostrowski and Opial types, etc. Some of these are extended to Banach space valued functions. These inequalities have also great impact on numerical analysis, stochastics and fractional differential equations. The author continues with generalized fractional approximations by positive sublinear operators which derive from the presented Korovkin type inequalities, and the author include also abstract cases. The author present also multivariate complex Korovkin quantitative approximation theory. It follows M-fractional integral inequalities of Ostrowski and Polya types. The author's results are weighted so they provide a great variety of cases and applications. The author lays there the foundations of stochastic fractional calculus. The author considers both Caputo and Conformable fractional directions, and the author derives regular and trigonometric results. Our positive linear operators can be expectation operator commutative or not. This book results are expected to find applications in many areas of pure and applied mathematics and stochastics. As such this book is suitable for researchers, graduate students and seminars of the above disciplines, also to be in all science and engineering libraries. |