



On Riemann-Liouville Type Fractional Generalized Kantorovich Operators

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Abstract

In this talk, we introduce a modification of univariate generalized Kantorovich operators constructed in [1] via Riemann-Liouville fractional integral. We first establish the uniform convergence of these newly defined operators and provide a quantitative estimate for the rate of convergence using the first-order Ditzian-Totik modulus of smoothness. Furthermore, we investigate a Voronovskaya type theorem and simultaneous approximation.

Keywords: Kantorovich operators, Riemann-Liouville fractional integral, Ditzian-Totik modulus of smoothness, Voronovskaya type theorem, simultaneous approximation.

References:

- [1] F. Altomare, M. Cappelletti Montano, V. Leonessa and I. Raşa, A generalization of Kantorovich operators for convex compact subsets. *Banach J. Math. Anal.* 11 (2017), no. 3, 591–614.