



Some Approximation Results for Lototsky Type Bernstein-Schurer Operators

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Abstract

In this paper, we study Lototsky type Bernstein-Schurer operators $B_{n,p}^*(f; x)$. These operators generalize the classical Bernstein-Schurer operators by incorporating functions $h_i(x)$ into the Lototsky basis. Using the Korovkin theorem, we prove that the sequence of operators converges uniformly to $f(x)$ on the space of continuous functions. An upper bound for the rate of approximation is obtained using the modulus of continuity. Furthermore, under certain differentiability conditions, a general theorem describing the asymptotic behavior of the operators is proved. These results support and generalize existing studies on Lototsky type operators and positive linear operators in approximation theory.

Keywords: Positive linear operators, Lototsky type Bernstein-Schurer operators, modulus of continuity.

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