On the Convergence of Series of Powers of Linear Positive operators

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Let $(L_n)_n$ be a sequence of linear positive operators $L_n : C_0[0,1] \to C[0,1]$ and denote $(L_n)^i = L_n \circ L_n \circ L_n \circ \ldots \circ L_n$ $(i \ge 0$ times). We consider the convergence of the sequences of operators of the form

$$A_n f = \sum_{i=0}^{\infty} Q_n(i) (L_n)^i f, \ f \in C_0[0,1],$$

where $Q_n(i) \in \mathbb{R}$ and $C_0[0,1]$ is a certain subspace of C[0,1]. We continue the previous study of geometric series of operators.

References

- U. Abel, M. Ivan, R. Păltănea, Geometric series of positive linear operators and the inverse Voronovskaya theorem on a compact interval, J. Approx. Theory, 184 (2014), 163-175
- [2] T. Acar, A. Aral and I. Raşa, Power series of positive linear operators, Mediterr. J. Math. (2019) 16:43.
- [3] R. Păltănea The power series of Bernstein operators, Automation Computers Applied Mathematics, 15, (2006), no. 1, 7–14.
- [4] R. Păltănea On the geometric series of linear positive operators, Constructive Mathematical Analysis, 2 (2019), no. 2, 49-56.