

Bernstein-Chlodovsky operators preserving exponentials

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The aim of this talk is to illustrate a generalization of Bernstein-Chlodovsky operators, introduced and studied in [1, 2], that preserves the exponential function e^{-2x} ($x \geq 0$).

In particular, in [1] we studied its approximation properties in several function spaces, also evaluating the rate of convergence by means of suitable moduli of continuity. As a consequence, we proved better error estimation than the original operators on certain intervals.

In [2] we continued the study of such operators by proving some Voronovskaya type theorems and deducing saturation results. A comparison of this new class of operators with the classical Bernstein-Chlodovsky ones is also made, proving that the new operators provide better approximation results for certain functions on $[0, +\infty)$.

References

- [1] T. Acar, M. Cappelletti Montano, P. Garrancho, V. L., *On Bernstein-Chlodovsky operators preserving e^{-2x}* , Bull. Belg. Math. Soc. Simon Stevin **26** (2019), no. 5, 681–698.
- [2] T. Acar, M. Cappelletti Montano, P. Garrancho, V. L., *Voronovskaya type results for Bernstein-Chlodovsky operators preserving e^{-2x}* , J. Math. Anal. Appl. **491** (2020), no. 1, 124307, 14 pp.