

APPROXIMATION BY PERTURBED BASKAKOV–TYPE OPERATORS

ANA MARIA ACU*, NURSEL ÇETIN AND GANCHO TACHEV

Abstract. In this paper, we introduce a new Baskakov-type operator. Firstly, we obtain the rate of convergence by using modulus of continuity and then Voronovskaja type asymptotic formula for these operators.

Mathematics subject classification (2020): 41A36.

Keywords and phrases: Baskakov-type operator, Voronovskaja type results, weighted modulus of continuity.

REFERENCES

- [1] A. M. ACU, V. GUPTA, G. TACHEV, *Better numerical approximation by Durrmeyer type operators*, Results Math. (2019), **74** (90).
- [2] A. M. ACU, P. N. AGRAWAL, *Better approximation of functions by genuine Bernstein-Durrmeyer type operators*, Carpathian J. Math. **35** (2) (2019), 125–136.
- [3] A. M. ACU, H. GONSKA, *Perturbed Bernstein-type operators*, Analysis and Mathematical Physics, (2020) 10–49.
- [4] A. M. ACU, G. BAŞCANBAZ-TUNCA, N. ÇETIN, *Approximation by certain linking operators*, Annals of Functional Analysis, (2020) 11: 1184–1202.
- [5] A. M. ACU, G. BAŞCANBAZ-TUNCA, *Approximation by complex perturbed Bernstein-type operators*, Results Math (2020) 75: 120.
- [6] V. A. BASKAKOV, *An example of a sequence of linear positive operators in the space of continuous functions*, Dokl. Akad. Nauk SSSR, **113** (1957), 249–251.
- [7] S. N. BERNSTEIN, *Démonstration du théorème de Weierstrass fondée sur le calcul des probabilités*, Commun. Kharkov Math. Soc. **13** (1912/1913) 1–2.
- [8] N. ÇETIN, *On complex modified Bernstein-Stancu operators*, Mathematical Foundations of Computing, **6** (1) (2023), 63–77.
- [9] V. GUPTA, G. TACHEV, A. M. ACU, *Modified Kantorovich operators with better approximation properties*, Numer Algor. (2019) 81: 125–149.
- [10] V. GUPTA, G. TACHEV, *Approximation with Positive Linear Operators and Linear Combinations*, Developments in Mathematics, vol. 50, Springer International Publishing AG 2017.
- [11] H. KHOSRAVIAN-ARAB, M. DEGHAN, M. R. ESLAHCHI, *A new approach to improve the order of approximation of the Bernstein operators: Theory and applications*, Numer Algor **77** (1) (2018), 111–150.
- [12] A. J. LÓPEZ-MORENO, *Weighted simultaneous approximation with Baskakov type operators*, Acta Math. Hungar. **104** (1–2) (2004), 143–151.