

REMARK ON VORONOVSKAJA THEOREM

Zoltán Finta

*Department of Mathematics, University of Babeş-Bolyai, 1, M.
Kogălniceanu st., 400084 Cluj-Napoca, Romania
[fzoltan@math.ubbcluj.ro]*

2000 Mathematics Subject Classification. 41A10, 41A25, 41A36

Keywords and phrases. Voronovskaja theorem, Bernstein operators, K-functional, first order Ditzian-Totik modulus of smoothness

In this note we establish a quantitative Voronovskaja theorem. Our estimate is given with the aid of the first order Ditzian-Totik modulus of smoothness.

REFERENCES

- [1] R.A. DeVore, G.G. Lorentz, *Constructive Approximation*, Springer, Berlin, 1993.
- [2] Z. Ditzian, V. Totik, *Moduli of Smoothness*, Springer, New York, 1987.
- [3] H. Gonska, *On the degree of approximation in Voronovskaja's theorem*, *Studia Univ. Babeş-Bolyai, Mathematica*, **52** (3) (2007), pp. 103-116.
- [4] H. Gonska, P. Pişul, I. Raşa, *On Peano's form of the Taylor remainder, Voronovskaja's theorem and the commutator of positive linear operators*, in: *Proceedings of the Int. Conf. on Numerical Analysis and Approximation Theory NAAT2006, Cluj-Napoca, Romania, 2006*, pp. 1-24.
- [5] G.T. Tachev, *Voronovskaja's theorem revisited*, *J. Math. Anal. Appl.*, **343** (2008), pp. 399-404.
- [6] V.S. Videnskii, *Linear Positive Operators of Finite Rank (in Russian)*, Leningrad: "A.I. Gerzen" State Pedagogical Institute, 1985.