

On the GBS Bernstein-Stancu's type operators

DAN MICLĂUȘ

ABSTRACT.

In the present paper we establish the form of remainder term associated to the GBS (Generalized Boolean Sum) Bernstein-Stancu's type operators, using bivariate divided differences.

Acknowledgement. I thank the reviewer for his suggestions leading to the improvement of the first version of this paper.

REFERENCES

- [1] Abel, U. and Ivan, M., *New representation of the remainder in the Bernstein approximation*, J. Math. Anal. Appl., **381** (2011), No. 2, 952–956
- [2] Bărbosu, D., *Two dimensional divided differences revisited*, Creat. Math. Inform., **17** (2008), No. 1, 1–7
- [3] Bărbosu, D. and Pop, O. T., *A note on the GBS Bernstein's approximation formula*, An. Univ. Craiova, Math. Comp. Sci. Ser., **35** (2008), 1–6
- [4] Bernstein, S. N., *Démonstration du théorème de Weierstrass fondée sur le calcul de probabilités*, Commun. Soc. Math. Kharkow, **13** (1912-1913), No. 2, 1–2
- [5] Della Vecchia, B., *On the approximation of functions by means of the operators of D. D. Stancu*, Studia Univ. Babeș-Bolyai, Mathematica, **37** (1992), No. 1, 3–36
- [6] Deltos, F. J. and Schempp, W., *Boolean Methods in Interpolation and Approximation*, Pitman Research Notes in Mathematics Series 230, Longman Scientific & Technical, New York, 1989
- [7] Gordon, W. J., *Distributive lattices and the approximation of multivariate functions*, in *Proceedings of the Symposium on Approximation with Special Emphasis on Splines*, New York, (Schoenberg, I. J., Ed.), Acad. Press, 1969, 223–277
- [8] Ionescu, D. V., *Divided differences (in Romanian)*, Ed. Acad. R. S. R., București, 1978
- [9] Ivan, M., *Elements of Interpolation Theory*, Mediamira Science Publisher, Cluj-Napoca, 2004
- [10] Lupaș, L. and Lupaș, A., *Polynomials of binomial type and approximation operators*, Studia Univ. Babeș-Bolyai, Mathematica, **32** (1987), No. 4, 61–69
- [11] Miclăuș, D., *The revision of some results for Bernstein-Stancu type operators*, Carpathian J. Math., **28** (2012), No. 2, 289–300
- [12] Popoviciu, T., *Sur quelques propriétés des fonctions d'une ou de deux variables réelles*, Mathematica, (1934), 1–85
- [13] Stancu, D. D., *Approximation of functions by a new class of linear polynomial operators*, Rev. Roum. Math. Pures et Appl., **13** (1968), 1173–1194
- [14] Stancu, D. D., *On the remainder of approximation of functions by means of a parameter-dependent linear polynomial operator*, Studia Univ. Babeș-Bolyai, Ser. Math.-Mech., **16** (1971), 59–66

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
FACULTY OF SCIENCES NORTH UNIVERSITY CENTER AT BAIA MARE
TECHNICAL UNIVERSITY OF CLUJ-NAPOCA
VICTORIEI 76, 430122 BAIA MARE, ROMANIA
E-mail address: danmiclausrz@yahoo.com