

L_p – APPROXIMATION BY ITERATES OF CERTAIN SUMMATION-INTEGRAL TYPE OPERATORS

Karunesh Kumar Singh and P. N. Agrawal

Abstract. The present paper is a study of L_p – approximation in terms of higher order integral modulus of smoothness for an iterative combination due to Micchelli, of certain summation-integral type operators using the device of Steklov means.

[Full text](#)

References

- [1] P. N. Agrawal and K. J. Thamer, *Approximation of unbounded functions by a new sequence of linear positive operators*, J. Math. Anal. Appl. **225** (1998), no. 2, 660–672. [MR1644320](#)(99f:41017). [Zbl 0918.41021](#).
- [2] P. N. Agrawal and Kareem J. Thamer, *On Micchelli combination of Szasz Mirakian-Durrmeyer operators*. Nonlinear Funct. Anal. Appl. **13** (2008), no. 1, 135–145. [MR2488418](#)(2009j:41027). [Zbl 1165.41005](#).
- [3] V. Gupta, M.K. Gupta and V. Vasishtha, *An estimate on the rate of convergence of Bézier type summation integral type operators*, Kyungpook Math. J. **43** (2003), 345-354. [MR2003479](#)(2004g:41022).
- [4] S. Goldberg and A. Meir, *Minimum moduli of ordinary differential operators*, Proc. London Math. Soc. (3) **23** (1971), 1–15. [MR0300145](#)(45 #9193). [Zbl 0216.17003](#).
- [5] E. Hewitt and K. Stromberg, *Real and Abstract Analysis*, McGraw-Hill, New York, 1956. [MR0367121](#)(51#3363). [Zbl 0225.26001](#).
- [6] N. Ispir and I. Yuksel, *On the Bezier variant of Srivastava-Gupta operators*, Appl. Math. E-Notes **5** (2005), 129–137 (electronic). [MR2120140](#)(2005i:41034). [Zbl 1084.41018](#).

2010 Mathematics Subject Classification: 41A30; 41A35.

Keywords: Iterative combination; L_p – approximation; modulus of smoothness; Steklov means.

This work was supported by “Council of Scientific and Industrial Research”, New Delhi, India.

<http://www.utgjiu.ro/math/sma>

- [7] C. P. May, *On Phillips operator*, J. Approximation Theory **20** (1977), no. 4, 315–332. [MR0445177\(56 #3521\)](#). [Zbl 0399.41021](#).
- [8] R. S. Phillips, *An inversion formula for Laplace transforms and semi-groups of linear operators*, Ann. of Math. (2) **59** (1954), 325–356. [MR0060730\(15,718b\)](#). [Zbl 0059.10704](#).
- [9] H. M. Srivastava and V. Gupta, *A certain family of summation-integral type operators*, Math. Comput. Modelling **37** (2003), no. 12-13, 1307–1315. [MR1996039\(2004f:41028\)](#).
- [10] A. F. Timan, *Theory of Approximation of Functions of Real Variables*, Macmillan, New York, 1983. [MR1262128\(94j:41001\)](#). [Zbl 0117.29001](#).
- [11] B. Wood, *L_p -approximation by linear combination of integral Bernstein-type operators*, Anal. Numér. Théor. Approx. **13** (1984), no. 1, 65–72. [MR0797800\(86m:41020\)](#). [Zbl 0573.41032](#).

Karunesh Kumar Singh
 Department of Mathematics,
 IIT Roorkee,
 Roorkee-247667 (Uttarakhand), India.
 e-mail: kksiitr.singh@gmail.com

P. N. Agrawal
 Department of Mathematics,
 IIT Roorkee,
 Roorkee-247667 (Uttarakhand), India.
 e-mail: pna_iitr@yahoo.co.in

License

This work is licensed under a [Creative Commons Attribution 4.0 International License](#). 

Surveys in Mathematics and its Applications **11** (2016), 141 – 155
<http://www.utgjiu.ro/math/sma>