ON TRIPLE SEQUENCE SPACE OF BERNSTEIN STANCU CHENEY AND SHARMA OPERATOR OF ROUGH I_{λ} -CONVERGENCE OF WEIGHT g

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Abstract. We introduce and study some basic properties of rough I_{λ} -convergence of weight g, where $g : \mathbb{N}^3 \to [0, \infty)$ is a function statisying $g(n) \to \infty$ and $g(n) \not\to 0$ as $n \to \infty$ of a triple sequence of Bernstein Stancu Cheney and Sharma operators and also investigate certain properties of rough I_{λ} -convergence of weight g.

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Key words. Triple sequences, rough convergence, closed and convex, cluster points and rough limit points, Bernstein Cheney and Sharma operators, *I*-statistical convergence of order g, I_{λ} -statistical convergence of weight g.

REFERENCES

- S. Aytar, Rough statistical convergence, Numer. Funct. Anal. Optim., 29 (2008), 291– 303.
- [2] S. Aytar, The rough limit set and the core of a real sequence, Numer. Funct. Anal. Optim., 29 (2008), 283–290.
- [3] A. Esi, On some triple almost lacunary sequence spaces defined by Orlicz functions, Research and Reviews: Discrete Mathematical Structures, 1 (2014), 16–25.
- [4] A. Esi and M. Necdet Catalbas, Almost convergence of triple sequences, Global Journal of Mathematical Analysis, 2 (2014), 6–10.
- [5] A. Esi and E. Savas, On lacunary statistically convergent triple sequences in probabilistic normed space, Appl. Math. Inf. Sci., 9 (2015), 2529–2534.
- [6] A. Esi, S. Araci and M. Acikgoz, Statistical convergence of Bernstein operators, Appl. Math. Inf. Sci., 10 (2016), 2083–2086.
- [7] A. Esi, N. Subramanian and A. Esi, On triple sequence space of Bernstein-Stancu operator of rough I_{λ} statistical convergence of weighted g(A), Ann. Fuzzy Math. Inform., **16** (2018), 337–361.
- [8] S. Debnath, B. Sarma and B.C. Das, Some generalized triple sequence spaces of real numbers, J. Nonlinear Anal. Optim., 6 (2015), 71–79.
- [9] A.J. Dutta, A. Esi and B.C. Tripathy, Statistically convergent triple sequence spaces defined by Orlicz function, J. Math. Anal., 4 (2013), 16–22.
- [10] E. Dündar and C. Cakan, Rough I-convergence, Demonstr. Math., 47 (2014), 638–651.

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- [11] M. Jeyam Bharathi, S. Velmurugan, N. Subramanian and R. Srikanth, On triple sequence space of Bernstein operator of rough I_{λ} -statistical convergence of weighted g(A), Journal of intelligent and fuzzy systems, **36** (2019), 13–27.
- [12] H.X. Phu, Rough convergence in normed linear spaces, Numer. Funct. Anal. Optim., 22 (2001), 199–222.
- [13] H.X. Phu, Rough continuity of linear operators, Numer. Funct. Anal. Optim., 23 (2002), 139–146.
- [14] H.X. Phu, Rough convergence in infinite dimensional normed spaces, Numer. Funct. Anal. Optim., 24 (2003), 285–301.
- [15] A. Sahiner, M. Gurdal and F.K. Duden, Triple sequences and their statistical convergence, Selçuk J. Appl. Math., 8 (2007), 49–55.
- [16] A. Sahiner and B. C. Tripathy, Some I-related properties of triple sequences, Selçuk J. Appl. Math., 9 (2008), 9–18.
- [17] N. Subramanian and A. Esi, The generalized tripled difference of χ^3 sequence spaces, Global Journal of Mathematical Analysis, **3** (2015), 54–60.
- [18] N. Subramanian, A. Esi and A. Indumathi, Stancu type of Cheney and Sharma operators of Pascal rough triple sequences, Communications in Nonlinear Analysis, 6 (2019), 64– 77.

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