

A Theorem on Pointwise Convergence of Mellin-Type Nonlinear m -Singular Integral Operators

Dilshad Qasim Hamza Haso¹ and Gumrah Uysal²

¹(MSc) KarabukUniversity, Institute of Graduate Programs, Department of Mathematics

²(Dr) KarabukUniversity, Department of Computer Technologies

Abstract:In this work, we prove a pointwise convergence theorem for Mellin-Type nonlinear m -singular integral operators defined by Bardaro et al. [1] based on the theory developed by Musielak [2] at generalized Mellin m - p -Lebesgue points (for definition of these point, see [3]) of integrable functions. Some graphical examples are provided.

This work is a part of the thesis entitled by “Mellin-type convolution operators from past to present” prepared by Dilshad Qasim Hamza Haso under the supervision of Dr. Gumrah Uysal.

References:

- [1] Bardaro, C., Karşı, H. and Vinti, G., On pointwise convergence of Mellin type nonlinear m -singular integral operators, Comm. Appl. Nonlinear Anal., 20(2): 25- 39, 2013.
- [2] Musielak, J., On some approximation problems in modular spaces, in: Constructive Function Theory'81 (Varna, 1981), Publ. House Bulgar. Acad. Sci., Sofia, 455-461, 1983.
- [3] Mamedov, R. G., The Mellin Transform and Approximation Theory, (in Russian), “Elm”, Baku, 1991.