ON *I*-CONVERGENCE CLASSES INDUCED BY MODULUS FUNCTIONS IN NEUTROSOPHIC 2-NORMED LINEAR SPACES

Nesar Hossain

Department of Basic Science and Humanities,
Dumkal Institute of Engineering and Technology,
West Bengal-742406, India
(E-mail: nesarhossain24@gmail.com)

and

Ömer Kişi*

Department of Mathematics,
Bartın University, 74100, Bartın, Turkey
(E-mail: okisi@bartin.edu.tr)

Abstract. This research article investigates new types of *I*-convergent sequence spaces, $\mathcal{Z}^I(\mathcal{N}_2)(f)$ and $\mathcal{Z}_0^I(\mathcal{N}_2)(f)$, induced by modulus functions within the framework of neutrosophic 2-normed space. An open ball within $\mathcal{Z}^I(\mathcal{N}_2)(f)$ is introduced, utilizing modulus functions to establish a novel structural framework. Furthermore, several topological properties, including linearity and Hausdorffness of $\mathcal{Z}^I(\mathcal{N}_2)(f)$, are examined via modulus functions and the neutrosophic 2-norm. Additionally, various results related to the space $\mathcal{Z}^I(\mathcal{N}_2)(f)$ are established through the neutrosophic 2-norm, contributing to the theoretical framework and enhancing the understanding of its structural properties.