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On Cesàro Submethods and Statistical Convergence in Neutrosophic Normed Spaces

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Abstract

Neutrosophic normed space (NNS) was defined and some important properties of NNS and statistical convergence with respect to NNS were investigated by [2]. In this study, we expand on this work by examining further properties of the Cesàro submethods associated with a strictly increasing sequence $\lambda = (\lambda_n)$ of positive integers defined by [1]. Namely, we examine further the inclusion properties of these submethods and their relationship to statistical convergence in neutrosophic settings. A counterexample is also constructed to show that the inclusion between these sequence classes is strict in general. In addition, we introduce the concepts of C_λ-completeness and D_λ-completeness. We prove that every neutrosophic normed space is complete with respect to these convergence methods.

Keywords: Neutrosophic normed space, statistical convergence, density, deferred convergence, Cauchy sequence.

References:

[1] J. A. Osikiewicz, Equivalence results for Cesàro submethods. Analysis (Munich) 20 (2000), no. 1, 35–43.

[2] M. Kirisci and N. Şimsek, Neutrosophic normed spaces and statistical convergence. J. Anal. 28 (2020), no. 4, 1059–1073.