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ON QUASI STATISTICAL CONVERGENCE IN NEUTROSOPHIC NORMED SPACES

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Abstract. In this paper, we introduce the notion of quasi statistical convergence in the neutrosophic normed spaces using quasi-density. We investigate a few properties of the newly introduced notion and examine the relationship with statistical convergence in the neutrosophic normed spaces. Finally, we introduce the concept of quasi statistical Cauchy sequence and show that quasi statistical Cauchy sequences are equivalent to quasi statistical convergent sequences in the neutrosophic normed spaces.

Keywords. Quasi-density, quasi statistical convergence, neutrosophic normed space.

AMS (MOS) subject classification: 46S40, 03E72, 40G15.

1 Introduction

In 1951, the idea of statistical convergence was introduced independently by Fast [5] and Steinhaus [25] with the aim of providing deeper insights into summability theory. The root of statistical density goes to Chebyshev's work. Later on, it was further investigated from the sequence space point of view by Fridy [8], Salat [22], and many mathematicians across the globe. Following their work several investigations and generalizations have been made by Altinok et al. [1], Mursaleen [16], Savas and Gurdal [23], Tripathy and Sen [26], and many others [3]. Statistical convergence has become one of the most active areas of research due to its wide applicability in various branches of mathematics such as number theory, mathematical analysis, probability theory, etc.

In an attempt to generalize the notion of statistical convergence, in 2012 Ozguc and Yurdakadim [18], introduced the concept of quasi statistical convergence in terms of quasi-density. They investigated the relationship of the introduced notion the with statistical convergence. For more details on quasi