NEW APPROACHES TO CONVERGENCE OF DOUBLE DIFFERENCE SEQUENCES IN L-FUZZY NORMED SPACE

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Abstract. This paper introduces the concept of rough ideal convergence for double difference sequences in L-fuzzy normed spaces. It defines the rough $\mathcal{J}_2$ limit set and investigates its topological and geometric properties. The study also presents the notion of $\mathcal{J}_2$-boundedness and examines its relationship with the rough $\mathcal{J}_2$ limit set. Furthermore, the concept of a rough $\mathcal{J}_2$-cluster point is developed, establishing key results that reveal the connection between closed balls and rough $\mathcal{J}_2$ limit sets in L-fuzzy normed spaces.