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ON $\mathcal{I}$-ASYMPTOTICALLY LACUNARY STATISTICAL EQUIVALENCE OF FUNCTIONS ON AMENABLE SEMIGROUPS

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ABSTRACT. In this study we define the notions of asymptotically paper, we introduce the concept of $\mathcal{I}$-asymptotically statistical equivalent and $\mathcal{I}$-asymptotically lacunary statistical equivalent functions defined on discrete countable amenable semigroups. In addition to these definitions, we give some inclusion theorems.

1. INTRODUCTION

Fast [5] presented an interesting generalization of the usual sequential limit which he called statistical convergence for number sequences. Schoenberg [24] established some basic properties of statistical convergence and also studied the concept as a summability method.

Using lacunary sequences Fridy and Orhan defined lacunary statistical convergence in [6]. Also, in another study, they gave the relationships between the lacunary statistical convergence and the Cesàro summability. After their definition, Freedman et al. [7] established the connection between the strongly Cesàro summable sequences and the strongly lacunary summable sequences.

The concept of $\mathcal{I}$-convergence of real sequences is a generalization of statistical convergence which is based on the structure of the ideal $\mathcal{I}$ of subsets of the set of natural numbers. P. Kostyrko et al. [8] introduced the concept of $\mathcal{I}$-convergence of sequences in a metric space and studied some properties of this convergence.

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