

## Compactly Uniform Integrability of Sequences of Measurable Functions in Banach Spaces

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**Abstract:** As the concept of convergence is one of the main concepts of topology, studying summability theory in a topological space is one of the interesting subjects of functional analysis. Recently, some authors have studied summability theory in a topological space by assuming either topological space to have a group structure or a linear structure. In this talk, first of all considering the compact subsets of a Banach space and using Bochner integral we introduce a new type of uniform integrability for sequences of Banach valued (Borel) measurable functions so that we generalize the concept of  $A$ -compactly uniform integrability. Furthermore, we study the concepts of  $A$ -strong convergence and  $A$ -statistical convergence, which are some of the main concepts of the summability theory, for sequences of Banach valued measurable functions and we investigate the relationship among these concepts by using this new type of uniform integrability. Moreover, we study these concepts in more general Hausdorff topological spaces which are not metrizable or linear. (This study is supported by The Scientific and Technological Research Council of Turkey, TUBITAK.)