

ABSTRACT**SOME TAUBERIAN CONDITIONS FOR THE WEIGHTED MEAN
METHOD OF SUMMABILITY**

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Classical Tauberian theory is constructed on finding necessary conditions in order to obtain convergence of sequence which is summable by a summability method. Conditions in these types are called Tauberian conditions, and theorems, through which the convergence is obtained from a summability method, are also called Tauberian theorems.

Firstly, conditions in these types were given by A. Tauber in 1897. In his study, Tauber has obtained convergence of a sequence which is summable by Abel summability method under suitable conditions. Later on, the studies are focused on weakening the Tauberian condition in the Tauberian theorems which are given for a certain summability method. Through this process, Tauberian theorems have been obtained for many summability methods. In this thesis, Tauber theorems for the weighted mean method of summability and the method of (J, p) are examined. Studies beginning from classical studies in the literature and studies up to now have been investigated.

In the first chapter, historical development of classical Tauberian theory and summability theory are mentioned, shortly. In the second chapter, the definitions and notations, which are going to be used throughout this thesis, are given and classical Tauberian theorems are addressed. In the third chapter, Tauberian theorems and Tauberian conditions for the weighted mean method of summability are given. In the fourth chapter, Tauberian theorems for the (J, p) summability method are given.

Key Words

The weighted mean method, the (J, p) method, Tauberian theorems, Tauberian conditions, classical control modulo, general control modulo, one-sided boundedness, slowly oscillating sequence.