TAUBERIAN THEOREMS UNDER STATISTICALLY NÖRLUND–CESÁRO SUMMABILITY METHOD

NAIM L. BRAHA

Abstract. Let \((p_n)\) and \((q_n)\) be any two non-negative real sequences with

\[ R_n := \sum_{k=0}^{n} p_k q_{n-k} \neq 0 \quad (n \in \mathbb{N}). \]

And \(C_1^n\) – Cesáro summability method. Let \((x_n)\) be a sequence of real or complex numbers and set

\[ N_{p,q}^{\alpha} C_1^n := \frac{1}{R_n} \sum_{k=0}^{n} p_k q_{n-k} \frac{1}{k+1} \sum_{v=0}^{k} x_v \]

for \(n \in \mathbb{N}\). In this paper, we present necessary and sufficient conditions under which the existence of the limit \(st - \lim_{n \to \infty} x_n = L\) follows from that of \(st - \lim_{n \to \infty} N_{p,q}^{\alpha} C_1^n = L\). These conditions are one-sided or two-sided if \((x_n)\) is a sequence of real or complex numbers, respectively.


Keywords and phrases: Generalized Nörlund-Cesáro summability method, one-sided and two-sided Tauberian conditions, statistical convergence.

REFERENCES