L₁-CONVERGENCE OF A SET OF MODIFIED SUMS

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Abstract. In this paper we have defined a new class of numerical sequences tending to zero briefly denoted by $R_{\log}$. Moreover, we have introduced the set of following trigonometric modified sums by

$$\Phi_n(x) = \frac{a_0}{2} + \sum_{k=1}^{n} \sum_{j=k}^{n} \left( \sum_{i=j}^{n} \Delta^2 \left( \frac{a_i}{i} \right) \right) k \cos kx$$

and

$$\Psi_n(x) = \sum_{k=1}^{n} \sum_{j=k}^{n} \left( \sum_{i=j}^{n} \Delta^2 \left( \frac{a_i}{i} \right) \right) k \sin kx,$$

and studied their $L_1$-convergence. Finally, we deduce conditions under which a cosine trigonometric series converges in $L_1$-norm.

References


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