

Completeness of exponential systems in weight spaces on the real axis

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Abstract

In this work we are searching for conditions on an increasing sequence of positive real numbers λ_k , $k = 1, 2, \dots$, for which it follows that for every continued limited function f on \mathbb{R} satisfying the following equation

$$\int_{-\infty}^{+\infty} e^{\lambda_k t - t^2} f(t) dt = 0, \quad k = 1, 2, \dots,$$

then one has that $f(t) = 0$, $\forall t \in \mathbb{R}$.

Initial problem is reduced to a problem about completeness of exponential systems or to the problem about sets of uniqueness.