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SPECTRAL ANALYSIS OF ONE-DIMENSIONAL BIHARMONIC OPERATOR WITH δ'' POTENTIAL

Abstract

In the given paper, the self-adjoint operator A corresponding to the differential operator $\frac{d^4}{dx^4} + \beta\delta''(x)$ is determined in the space $L_2(\mathbb{R})$. Explicit representation of the resolvent of the operator A is found. It is shown that $\sigma_{ese}(A) = \sigma_{ac}(A) = [0, +\infty)$. The negative eigen value of the operator A and corresponding normed eigen function are found.