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SPECTRAL ANALYSIS OF STURM-LIOUVILLE OPERATOR ON A SEMI-AXIS WITH δ' -POTENTIAL

Abstract

In the paper, the self-adjointness of the operator $A = -\frac{d^2}{dx^2} + \beta\delta'(x - x_0)$ in the space $L_2(0, +\infty)$ is proved. It is shown that the limit spectrum of the operator A coincides with the absolutely continuous part of its spectrum. The integral property of the resolvent of the operator A is proved and an explicit expression for the integral kernel is obtained.