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ASYMPTOTIC BEHAVIOR OF EIGEN-VALUES OF A BOUNDARY VALUE PROBLEM WITH SPECTRAL PARAMETER IN THE BOUNDARY CONDITIONS FOR THE SECOND ORDER ELLIPTIC DIFFERENTIAL-OPERATOR EQUATION

Abstract

In this present paper we obtain the asymptotic formula for eigen values of the following boundary value problems

$$-u''(x) + Au(x) = \lambda u(x), \quad x \in (0, b),$$

$$u'(0) - \lambda u(0) = 0, \quad u'(b) + \lambda u(b) = 0,$$

where $A = A^* \geq \omega^2 I$ in H, A^{-1} is completely continuous in H, $\lambda > 0$ is a spectral parameter, H is a separable Hilbert space.