Ziyathan S. ALIYEV, Aida A. DUNYAMALIYEVA

ON DEFECT BASICITY OF THE SYSTEM OF EIGEN FUNCTIONS OF A SPECTRAL PARAMETER WITH A SPECTRAL PROBLEM IN THE BOUNDARY CONDITIONS

Abstract

We consider the spectral problem

$$-y''(x)+q(x)y(x)=\lambda y(x),x\in(0,1),$$

$$y'(0)=(a_0\lambda+b_0)y(0),$$

$$y'(1)=(a_1\lambda+b_1)y(1),$$

where λ *is a spectral parameter,* $q(x)\in C[0,1]$, $q(x)>0$, $x\in[0,1]$, $a_i,b_i,i=0,1$ *are real constants, and* $a_0<0$, $a_1<0$, $b_0>0$, $b_1<0$.

We study general characteristics of location of eigen values on a real axis, oscillation properties of eigenfunctions, basis properties in the space $L_p(0,1)$, $1<p<\infty$ *of the subsystems of eigenfunctions of this problem.*