

ON ONE PROPERTY OF OPERATOR BUNDLES OF MULTIPARAMETER SPECTRAL PROBLEM

Abstract

By separating the variables of partial differential equations, depending on the number of variables we get a multiparameter spectral problem, i.e. the system of differential equations that are connected with each other only by number parameters. Having applied the Green function for the solution of boundary value problems with partial differential equations, we get a system of weakly-connected integral equations of the form

$$\left\{ \begin{array}{l} \sum_{j=1}^n \lambda_j K_{ij} \varphi_j = \varphi_i, \quad \varphi_i \in H_i \\ i = 1; \dots; n; \end{array} \right.$$

Therefore, investigation of such problems is of great interest in spectral theory. In this paper we study one property of operator bundles that is obtained by studying such a multiparameter problem. We investigate the conditions under which the operators separating the spectral parameters are defined on all the space.