

Etibar S. PANAKHOV, Hikmet KOYUNBAKAN

INVERSE PROBLEM FOR SINGULAR STURM-LIOUVILLE
OPERATOR

Abstract

It is well known that the two spectra $\{\lambda_n\}$ and $\{\mu_n\}$ uniquely determine the potential function $q(x)$ in a Sturm - Liouville equation defined on finite interval $[0,1]$ having the singularity type $\frac{l(l+1)}{x^2}$ where l is a integer at the point zero.

In this work, we give the solution of the Sturm - Liouville problem on two partially non coincide spectra for the Sturm - Liouville equation with the peculiarity in zero. In partially in this case we obtain Hochstadt's theorem concerning the structure of the difference $q(x) - \tilde{q}(x)$.