



ÇANKAYA UNIVERSITY
FACULTY OF ARTS AND SCIENCES
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCES

SEMINAR

The Spectral Analysis of Dissipative Operators

SPEAKER : Prof. Dr. Elgiz Bayram

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Abstract

Let L_{\min} denote the minimal symmetric operator in $L_2(0, \infty)$ generated by the differential expression

$$\ell(y) := -(p(x)y')' + q(x)y, x \in [0, \infty).$$

We assume that the deficiency indices of L_{\min} are $(2, 2)$. In other words, we assume that the differential expression $\ell(y)$ is in limit-circle case. In this talk, using Livsic's theorem and Krein's theorem we prove that the root vectors (principle vectors) associated with the discrete spectrum of the maximal dissipative extensions of the minimal symmetric operator L_{\min} are complete in $L_2(0, \infty)$. Moreover, we show that this method can also be generalized to some dissipative operators with transmission (impulsive) conditions.

All interested are cordially invited.

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