

INTERNATIONAL BIWEEKLY ONLINE SEMINAR ON ANALYSIS, DIFFERENTIAL EQUATIONS AND MATHEMATICAL PHYSICS

Coordinators: Prof. Alexey Karapetyants, Prof. Vladislav Kravchenko

[JOIN THE SEMINAR](#)

28 April 2022, 6 pm (UTC+3)

Inverse spectral problem for the matrix Sturm-Liouville operator

Natalya Bondarenko, Samara National Research University, Saratov State University,
Russia,

BondarenkoNP@info.sgu.ru

We will consider the self-adjoint matrix Sturm-Liouville operator on a finite interval with singular potential of class W_2^{-1} and with the general self-adjoint boundary conditions. This operator generalizes the Sturm-Liouville operators on geometrical graphs. We will discuss the inverse problem that consists in the recovery of the considered operator from the spectral data (eigenvalues and weight matrices). For this inverse problem, the uniqueness theorem has been proved, the necessary and sufficient conditions of solvability and a reconstruction procedure have been obtained. The problem solution is based on the method of spectral mappings. In addition, we will consider the application of the main results to the Sturm-Liouville operator on a star-shaped graph.

*Seminar website: <https://msrn.sfedu.ru/sl>. The seminar uses Microsoft Teams online platform.
Please send questions to ademp.seminar@gmail.com (Tatiana Andreeva, scientific secretary).

The seminar is organized by the Regional Mathematical Center of the Southern Federal University in collaboration with Institute of Mathematics, Mechanics and Computer Sciences of the Southern Federal University and the special Interest ISAAC-OTHA group in Operator Theory and Harmonic Analysis.

**Региональный научно -
образовательный
математический центр**
Южный Федеральный Университет
Ростов-на-Дону

Regional Mathematical Center
<https://rmc.sfedu.ru/>



**Institute of Mathematics, Mechanics
and Computer Sciences**
<http://www.mmcs.sfedu.ru/>



**Special Interest ISAAC-OTHA group in
Operator Theory and Harmonic Analysis**
<http://otha.sfedu.ru/isaac/>