

Inverse problems for Sturm-Liouville operators with a delay less than half the length of the interval and Robin boundary conditions

Milenko Pikula¹, Vladimir Vladicic¹, and Biljana Vojvodic²

¹Department of Mathematics, University of East Sarajevo, pikulam47@gmail.com,
vladimir.vladicic@ffuis.edu.ba

²Ministry of Science and Technology of the Republic Srpska

This paper deals with an inverse problem for non-self-adjoint second-order differential operators with a constant delay less than $\pi/2$ and a potential from $L_2[\tau, \pi]$ under Robin boundary conditions. We study the inverse spectral problem of recovering operators from their spectral characteristics. Two boundary value problems are considered and we prove that a delay and a potential are uniquely determined from their spectra.

References

- [1] G Freiling and V. Yurko, Inverse Sturm-Liouville diferential operators with a constant delay, *Appl. Math. Lett.* **25**(11) (2012), 1999–2004.
- [2] S. Buterin and V. Yurko, An inverse spectral problem for Sturm-Liouville operators with a large constant delay, *Anal. Math. Phys.* (2017), 1–11.
- [3] Vladicic V., Pikula M., An inverse problems for Sturm-Liouville-type differential equation with a constant delay, *Sarajevo Journal of Mathematics* **12**(1) (2016), 83–88.
- [4] Buterin S., Pikula M., Yurko V., Sturm-Liouville differential operators with deviating argument, *Tamkang J. Math.* **48**(1) (2017), 61–71.