

Mamedov, Khanlar R.

On a basic problem for a second order differential equation with a discontinuous coefficient and a spectral parameter in the boundary conditions. (English) [Zbl 1109.34061](#)

Mladenov, Ivaïlo (ed.) et al., Proceedings of the 7th international conference on geometry, integrability and quantization, Sts. Constantine and Elena, Bulgaria, June 2–10, 2005. Sofia: Bulgarian Academy of Sciences (ISBN 954-8495-30-9/pbk). 218-225 (2006).

The author considers a Sturm-Liouville problem on a finite interval $[a, b]$ with parameter dependent boundary conditions and an interface condition. The coefficients are such that the problem has a selfadjoint realization in the space $L_2[a, b] \oplus \mathbb{C}^n$ for $n = 2$ or $n = 3$ with a definite and indefinite inner product. Then, the standard theory of selfadjoint operators with compact resolvent in Hilbert and Krein spaces, respectively, leads to results on (Riesz) basis property of the eigenvectors (and associated vectors).

For the entire collection see [\[Zbl 1089.53004\]](#).

Reviewer: Manfred Möller (Johannesburg)

MSC:

- [34L10](#) Eigenfunctions, eigenfunction expansions, completeness of eigenfunctions of ordinary differential operators
- [34B24](#) Sturm-Liouville theory
- [34B10](#) Nonlocal and multipoint boundary value problems for ordinary differential equations
- [34B09](#) Boundary eigenvalue problems for ordinary differential equations

[Cited in 4 Documents](#)

Keywords:

[Sturm-Liouville problem](#); [completeness](#); [minimality](#); [basis property](#); [parameter dependent boundary condition](#), [interface condition](#)