New type Sturm-Liouville eigenvalue problem with interior singular point

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Abstract: This work investigates a kind of discontinuous Sturm-Liouville problem with boundary conditions, and transmission conditions are imposed at an singular interior point. We establish some spectral properties of the considered problem. At first, we shall define some new Hilbert spaces and give some inequalities which is needed for further investigation. Then, we suggest some methods for solving these Sturm-Liouville problems with transmission conditions.

Keywords: Sturm-Liouville problems, eigenvalues, transmission conditions.

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