About some problems in spectral theory of differential operators

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First, we investigate the dependence of spectral data of Sturm-Liouville operator on parameters defining the boundary conditions. With this aim we introduce the concept of "Eigenvalues function of family of Sturm-Liouville operators" (EVF) and investigate its properties.

Secondly we solve the inverse Sturm-Liouville problem by EVF.

We also provide an analogue of uniqueness theorem (in inverse problem) of Marchenko and one generalization of theorem of Ambarzumian.

New uniqueness theorems we also prove in inverse problems for canonical Dirac systems.

We give the description of isospectral Dirac operators.

We have proved, that in general case the analogue of Ambarzumian theorem for Dirac operator is not true, but in the same time, we describe particular cases, where we can formulate the analogues of Ambarzumian theorem.

We also give some new results in constructive solution of inverse problem for Dirac system.

Acknowledgement: This work was supported by State Committee of Science MES RA in frame of the research project No. 15T-1A392.