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Dirac System with Undifferentiable Potential and Antiperiodic Boundary Conditions

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The object of the paper is Dirac system with antiperiodic boundary conditions and complex-valued conditions potential. A new method is suggested for investigating spectral properties of this boundary problem. The method is based on the formulas of the transform operators type. It is rather elementary and simple. Using this method asymptotic behaviour of eigenvalues is specificated and it is proved that eigen and associated functions form Riesz basis with brackets in the space of quadratic summerable two-dimensional vector-functions since eigenvalues may be multiple. The structure of Riesz projection operators is also studied. The results of the paper can be used in spectral problems for equations with partial derivatives of the 1-st order containing involution.

Key words: Dirac system, spectrum, asymptotics, Riesz basis.

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