A Proof of the N. Davydov Theorem for Douglis Algebra Valued Functions

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Abstract : The classical Beltrami system of elliptic equations generalizes the Cauchy Riemann equation in the complex plane and offers the possibility to consider homogeneous system with no terms of zero order. The theory of Douglis-valued functions, called Hyper-analytic functions, is special case of the above situation. In this note, we prove an analogue of the N. Davydov theorem in the framework of the theory of hyperanalytic functions. The used methodology contemplates characteristic methods of the hypercomplex analysis as well as the singular integral operators and elliptic systems of the partial differential equations theories.

Keywords : Beltrami equation, Douglis algebra-valued function, Hypercomplex Cauchy type integral, Sokhotski-Plemelj formulae

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