

# Some properties of the Cauchy-type integral for the Moisil-Theodorescu system of partial differential equations

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The talk is based on joint results with M. Shapiro. In the talk it will be told about the analog of the Cauchy-type integral for the theory of Moisil-Theodorescu system of partial differential equations in case of a piece-wise Liapunov surface of integration. The main topics of the talk concern theorems which cover basic properties of that Cauchy-type integral: the Sokhotski-Plemelj theorem for it as well as the necessary and sufficient condition for the possibility to extend a given Hölder function from such a surface up to a solution of Moisil-Theodorescu system of partial differential equations in a domain. Formula for the square of the singular Cauchy-type integral is given. The proofs of all these facts are based on intimate relations between the theory of Moisil-Theodorescu system of partial differential equations and some versions of quaternionic analysis.