

## Regularization of a solution to the Cauchy problem for generalized Cauchy-Riemann system

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The problem of describing the function given on a part of the boundary of a domain which can be analytic continued into the domain has been thoroughly studied. The first result was obtained by V.A.Fock and F.M.Kyni [1] in the one-dimensional case. A generalization of the theorem of Fock-Kyni was obtained in a series of the papers for holomorphic function in several variables [2]. The problem of continuation of function given on a part of the boundary of a domain to this domain as a solution of the Helmholtz equation, a equation theory elasticity, i.e, as harmonic function has been considered in ([3]-[5]).

We consider the problem of describing the vector-function given on a part of the boundary of a three dimensional domain can be continued to this domain as a solution of the generalized Cauchy-Riemann system of equations. Our investigation is based on the analog of the generalized Cauchy integral formula for the generalized system of Cauchy-Riemann and a jump formula for the limiting values of the generalized Cauchy- type integral [6]. Continuation for the solution of the of the generalized Cauchy-Riemann system equations to the domain by its values on a part of the boundary is based on constructing the Carleman matrix for the generalized system of Cauchy-Riemann equation. The notation of Carleman function was introduced by M.M.Lavrent’ev [7]. By using the continuation formula we found necessary and sufficient for the extendibility of functions given an a part of a boundary to the domain as a solution of the generalized Cauchy-Riemann system. We prove the Fock-Kyni theorem fore this one.

### Reference

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