

**ON THE APPLICATION OF THE REGULARIZATION METHOD TO THE
CONSTRUCTION OF A CLASSICAL SOLUTION OF POISSON'S EQUATION****E. M. Mukhamadiev, G. E. Grishanina, A. A. Grishanin**

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Necessary and sufficient conditions are found for the existence of a classical solution of Poisson's equation $\Delta u = f$ with continuous function f in a bounded planar domain. By virtue of the known smoothness properties of a generalized harmonic function, these conditions also ensure that all generalized solutions of Poisson's equation are classical in this domain. Particular classes of functions f satisfying the conditions of existence of a classical solution are described.

Keywords: Poisson's equation, classical and generalized solutions, harmonic function, continuous function, strongly continuous function, uniformly strongly continuous function.

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