Kytmanov, Aleksandr Mechislavovich; Myslivets, Simona Glebovna


Summary: The problem on holomorphic continuation of functions defined on the boundary of a domain into this domain is topical in the multi-dimensional complex analysis. It has a long history beginning from works by Poincaré and Hartogs. In the present work we consider continuous functions defined on a boundary of a bounded domain \( D \) in \( \mathbb{C}^n \), \( n > 1 \), and possessing a generalized Morera property along the family of complex straight lines intersecting the germ of a real analytic manifold of codimension 2 lying away of the boundary of the domain. The Morera property is the vanishing of the integral of this function over the intersection of the boundary of the domain with the complex curve. We show that such function possesses a holomorphic continuation into the domain \( D \). For functions of one complex variable, the Morera property obviously does not imply the existence of holomorphic continuation. This is why such problem can be considered only in the multi-dimensional case \( (n > 1) \).

MSC:
32A10 Holomorphic functions of several complex variables
32A26 Integral representations, constructed kernels (e.g., Cauchy, Fantappiè-type kernels)
32D15 Continuation of analytic objects in several complex variables

Keywords:
holomorphic continuation; morera boundary condition; Bochner-Martinelli kernel

Full Text: DOI MNR

References:

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.