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The materials are intended for researchers, teachers, graduate undergraduates and senior students specializing in various areas of mathematics and its applications.

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2. Kats B. A., Katz D. B., Zhixin Lyu *The Riemann Boundary Value Problem on Circular Spirals*. Siberian Mathematical Journal. 2021. Vol. 62, pp. 423–433.

MITYUK AND HAYMAN RADII FOR MULTIPLY CONNECTED DOMAINS

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Let D be a multiply connected domain. The Mityuk conformal radius of the domain D at a point $w \in D$ has the form $R(w) = 1/|\varphi(w, w)|$, where $F(w, w_0) = (w - w_0)\varphi(w, w_0)$ is the holomorphic univalent function that maps D onto the canonical domain, the unit disk Δ with circular concentric cuts ([1]; see also [2]). The inner Hayman radius of the domain D at a point $w \in D$ is defined as $r(w) = e^{g(w,w)}$, where $G(w, w_0) = -\ln|w - w_0| + g(w, w_0)$ is the Green function of the domain D [3].

Extension of the class of canonical domains by adding radial cuts to Δ entails a change of the construction of both types of radii, conformal and inner, which, in this setting, will be called generalized and denoted, respectively, by $M(w)$ and $m(w)$. So, the generalized inner radius of the domain D will be defined as $m(w) = e^{s(w,w)}$, where

$$S(w, w_0) = -\ln|w - w_0| + s(w, w_0)$$

is an analogue of the Green and Neumann function of the region D.

We discuss the properties of both types of generalized radii, such as the existence of critical points, the relationship of their number with the order of connectivity of a domain, the applications in the inverse boundary value problems, and some others. In particular, we have the following

Theorem. *The generalized Mityuk conformal radius of an $(n+1)$-connected domain D with analytic boundary has at least one critical point. In the case $n = 1$ there are examples of doubly connected domains D for which the equation $\partial M/\partial w = 0$ has no solutions.*

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