

# İSTANBUL ANALYSIS SEMINARS

## CONFORMAL RADIUS AND RELATED CHARACTERISTICS

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**Abstract:** Let  $D$  be a domain in  $\overline{\mathbb{C}}$ ,  $D \neq \overline{\mathbb{C}}$ ,  $a \in D$ , and  $g_D(a, z)$  be the subharmonic Green function of  $D$  with the singularity  $\ln |z - a|$  at  $a$ . The constant

$$r(a, D) = \exp \left( - \lim_{z \rightarrow a} (g_D(a, z) - \ln |z - a|) \right)$$

is called the interior radius of  $D$  relative to  $a$ . If  $D$  is simply connected, then this constant coincides with the conformal radius of  $D$  relative to  $a$  and equals to  $\frac{1}{|\omega'(a)|}$ , where  $\omega$  is a conformal mapping of  $D$  onto the unit disc with  $\omega(a) = 0$ . We develop some new approach to this one and related characteristics (transfinite diameter, Chebyshev constant and capacity). In particular, we obtain an expression for interior radius in terms of extremal Wronskians, which is new even for the case of simply connected domains.

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