İSTANBUL ANALYSIS SEMINARS

INTERNAL CHARACTERISTICS OF DOMAINS IN $\mathbb{C}^n$– I

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Abstract: My talk is devoted to internal capacity characteristics of a domain $D \subset \mathbb{C}^n$, relative to a point $a \in D$, which have their origin in the notion of the conformal radius of a simply connected plane domain relative to a point. Our main goal is studying internal Chebyshev constants and transfinite diameters for a domain $D \subset \mathbb{C}^n$ and its boundary ∂D relative to a point $a \in D$ in the spirit of my article (*Math. USSR Sbornik* **25**(1975), 350-364), where similar characteristics have been investigated for compact sets in $\mathbb{C}^n$. This talk is also tightly connected with my recent survey "Transfinite diameter, Chebyshev constants, and capacities in $\mathbb{C}^n$," (*Ann. Pol. Math.* **106** (2012), 293-313), which was a subject of some of my talks in İstanbul Analysis Seminars. The central notion of directional Chebyshev constants is based on the asymptotic behavior of extremal monic "polynomials" and "copolynomials" in directions determined by the arithmetics of the indices set $\mathbb{Z}^n$. Some results are closely related to results on s-th Reiffen pseudometrics and internal directional analytic capacities of higher order (Jarnicki-Pflug, Nivoche) studying the asymptotic behavior of extremal "copolynomials" in varied directions as approaching to the point a.

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