BOUNDARY HARNACK PRINCIPLE ON INNER UNIFORM DOMAINS

JANNA LIERL
UNIVERSITÄT BONN

The boundary Harnack principle states that the ratio of any two functions that are positive and harmonic on some domain, is bounded near part of the boundary where both functions vanish. A given domain may or may not have this property, depending on the geometry of its boundary and the ambient metric space. In this talk I will focus on a geometric (scale-invariant) version of the boundary Harnack principle which holds on domains that satisfy an inner uniformity condition. This condition is described solely in terms of the length metric of the domain. Interesting examples in Euclidean space are the interior or exterior of the Koch snowflake, or the complement of a convex set. I will discuss generalizations to (non-symmetric or fractal-type) Dirichlet spaces that have certain geometric properties (doubling measure, Poincare inequality, etc).