Sharp estimates for Green potentials on non-smooth domains

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Abstract

The goal is to derive optimal estimates for the Green potential associated with an arbitrary bounded Lipschitz domain. The main result allows us to prove a (sharpened version of a) conjecture made in the early 90’s by E.Stein and collaborators, and to improve on a pleiad of other, earlier results, due to B.Dahlberg, V.Adolfsson, S.Fromm, D.Jerison, C.Kenig, G.Verchota and T.Wolff.