1003-35-1624   **Denis A Labutin*** (`labutin@math.ucsb.edu`), Department of Mathematics, UCSB, Santa Barbara, CA 93106. *Wolff potentials and singularities of harmonic functions.* Preliminary report.

Consider a compact set whose complement admits a harmonic function blowing up at the boundary. The classical theorem states that this property is equivalent to the vanishing of the electrostatic capacity of the compactum. In our problem we will require that the blow-up rate is strong enough to garantee the completeness of a certain metric associated with the harmonic function. We discuss some estimates for a special type of integrals, the so called Wolff potentials, which allow to describe compacta admitting such functions. (Received October 05, 2004)