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On an Asymptotic Equality Between the Minimum and the Maximum of δ -Subharmonic Functions of Zero Genus

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Abstract. Let w be a δ -subharmonic function w of zero genus, let μ_+ and μ_- be the positive and negative variations respectively of the Riesz charge associated with w and let $n(t) := \mu_+(\{|z| \leq t\}) + \mu_-(\{|z| \leq t\})$. In order that

$$\sup_{|z|=r} w(z) - \inf_{|z|=r} w(z) = o(1) \quad \text{as } r = r_j \rightarrow +\infty,$$

it is sufficient that the condition

$$\liminf_{r \rightarrow +\infty} \left(\frac{1}{r} \int_1^r t \, dn(t) + r \int_r^{+\infty} \frac{dn(t)}{t} \right) = 0$$

holds. In the case when the supports of μ_1 and μ_2 are concentrated on the opposite rays emanating from $z = 0$ this condition is also necessary.

Keywords. δ -subharmonic function, meromorphic function, minimum modulus.

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