

1116-35-2546

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Properties of functionals of Almgren- and Weiss-type for harmonic functions on Carnot groups.

We give a definition of Almgren's frequency at the identity of a Carnot group of arbitrary step and analyze its properties. An important quantity in our analysis is called the *discrepancy* of a function u at the identity. Our main result is that if u is harmonic with vanishing discrepancy at the identity, then our definition of Almgren's frequency is non-decreasing. This in turn implies the strong unique continuation property for such functions. We reinforce the importance of discrepancy by providing a definition of the Weiss-type functionals \mathcal{W}_κ for $\kappa \geq 0$ on Carnot groups. Under the same assumptions on u , \mathcal{W}_κ is non-decreasing, and constant if and only if u is homogeneous of degree κ . (Received September 22, 2015)