

# Łojasiewicz exponent and pluricomplex Green's function on algebraic sets

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The talk is based on the paper [1].

The classical invariance theorem for pluricomplex Green functions in  $\mathbb{C}^N$  states that

If  $k, \ell$  are positive integers and  $f : \mathbb{C}^N \rightarrow \mathbb{C}^N$  is a holomorphic mapping, then the following conditions are equivalent:

(i)  $f$  is a polynomial mapping of degree at most  $\ell$  and  $\liminf_{\|z\| \rightarrow \infty} \frac{f(z)}{\|z\|^k} > 0$ ,

(ii)  $f$  is a proper mapping and for every compact set  $K \subset \mathbb{C}^N$

$$k V_{f^{-1}(K)} \leq V_K \circ f \leq \ell V_{f^{-1}(K)} \quad \text{in } \mathbb{C}^N,$$

see [Kl82a], [Kl82a] or [Kl, Th.5.3.1]. The main objective of the talk is to present a generalization of this result to pluricomplex Green functions on algebraic sets.

## References

- [1] L. Bialas-Ciez, M. Klimek, *Łojasiewicz exponent and pluricomplex Green's function on algebraic sets*, preprint 2022.
- [2] M. Klimek, *On the invariance of the  $L$ -regularity under holomorphic mappings*, Univ. Iagello. Acta Math. 23 (1982), pp. 27-38.
- [3] M. Klimek, *Extremal plurisubharmonic functions and  $L$ -regular sets in  $\mathbb{C}^n$* , Proc. Royal Irish Acad. 82A (1982), pp. 217-230.
- [4] M. Klimek, *Pluripotential Theory*, London Mathematical Society Monographs New Series 6, Clarendon Press, Oxford, 1991.