

# LOCAL AND GLOBAL INVARIANTS OF POLARIZED SELF MAPS

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In the first talk we will give examples of self maps of projective space obtained as gradients (Newton method, Lattes map,  $n$ -th power..)(work with Ben Hutz). We will also explain why polarized self maps are essentially the restriction of globally defined self maps on the ambient projective space ( a variation on a result of Fakhruddin work with Anupam Bathnagar)

In the second talk we will explain different notions of bad reduction for self maps and explain the Shafarevich-Faltings finiteness we have obtained (work with Tom Tucker) . We will also give a criterium of minimality in term of semi stability in the geometric invariant theory sense. This will be applied to comparisons of the resultant with the conductor for a polarized self map of degree 2 of the Riemann sphere. (work with M. Tepper and P. Williams)

In the third talk we will introduce the notion of Algebraic Entropy for contracting self maps of the punctured spectrum of a local ring. We will explain a smoothness criterium for totally ramified local self maps and the Cohen-Fakhruddin theorem (work with M Majidi-Zolbanin and N. Miasnikov)