

LINEARIZATION AND PERIODIC POINTS IN NON-ARCHIMEDEAN DYNAMICS

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ABSTRACT. We discuss recent results in non-Archimedean dynamics concerning the local geometric distribution of periodic points near indifferent fixed points and its relation to linearizability. In particular, we consider quadratic maps defined over \mathbb{C}_p . Using recent results on the size of quadratic linearization disks and localizing all periodic points of these maps we show that periodic points are not the only obstruction for linearization. In so doing, we provide the first known examples in the dynamics of polynomials over \mathbb{C}_p where the boundary of the linearization disk does not contain any periodic point.

Key words: small divisors; linearization; p -adic numbers; ramification; periodic points.

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Date: January 8, 2013.