The field of iterates of a rational function

Solomon Vishkautsan

Tel-Hai Academic College, Israel

`wishcow@telhai.ac.il`

Francesco Veneziano

University of Genova

`veneziano@dima.unige.it`

We will discuss the field of definition of a rational function and in what ways it can change under iteration, in particular when the degree over the base field drops. We present examples of families of rational functions with the property above, and prove that in the special case of polynomials, only one of these families is possible. We also explain how this relates to Ritt's decomposition theorem on polynomials. Joint work with Francesco Veneziano (SNS Pisa).