1078-11-233 **Yûsuke Okuyama*** (okuyama@kit.ac.jp), Division of Mathematics, Graduate School of Science and Technology, Kyoto Institute of Technology, Kyoto 606-8585, Japan. *Quantitative equidistribution in dynamics over general fields.*

Let $\mathsf{P}^1(K)$ denote the Berkovich projective line over an algebraically closed and complete normed field K. Let f be a rational function on $\mathbb{P}^1(K)$ of degree $d > 1$, and μ_f denote the equilibrium measure of f on P^1. A quantitative equidistribution

$$|\int_{\mathsf{P}^1} \phi \mathrm{d}(\frac{(f^n)^*(a)}{d^n} - \mu_f)| = O(\sqrt{nd^{-n}})$$

is obtained for every C^1 test function ϕ and every $a \in \mathsf{P}^1$, except for a subset of capacity 0 in the derived set of acyclic critical orbits of f in $\mathbb{P}^1$. The proof is based on estimating the error terms of asymptotic Feketeness of $((f^n)^*(a))$ in terms of the proximity of acyclic critical orbits of f to the initial a.

For a given number field k with a place v, in the arithmetic setting that $K = \mathbb{C}_v$ and that f has its coefficients in k, the dynamics $f : \mathbb{P}^1(\overline{k}) \to \mathbb{P}^1(\overline{k})$ ($\overline{k}$ is the algebraic closure of k) is also interesting, and using the dynamical Diophantine approximation due to Silverman, and Szpiro and Tucker, the above estimate recovers Favre and Rivera-Letelier's arithmetic estimate on $\mathbb{P}^1(\overline{k})$, in a purely local manner. (Received December 09, 2011)