Favre, Charles; **Rivera-Letelier, Juan**

Brolin's equidistribution theorem in p-adic dynamics. (Théorème d'équidistribution de Brolin en dynamique p-adique.) (French. Abridged English version) Zbl 1052.37039

C. R., Math., Acad. Sci. Paris 339, No. 4, 271-276 (2004).

Summary: We prove an analog of the famous equidistribution theorem of Brolin for rational mappings in one variable defined over the p-adic field $\mathbb{C}_p$. We construct a mixing invariant probability measure which describes the asymptotic distribution of iterated preimages of a given point. This measure is supported on the Berkovich space $P^1(\mathbb{C}_p)$ associated to $\mathbb{P}^1(\mathbb{C}_p)$. We show that its support is precisely the Julia set of R as defined by Rivera-Letelier. Our results are based on the construction of a Laplace operator on real trees with arbitrary number of branching as done in [*C. Favre* and *M. Jonsson*, The valuative tree, Lecture Notes in Mathmatics. Berlin etc.: Springer-Verlag, in press].

MSC:

37F10 Dynamics of complex polynomials, rational maps, entire and meromorphic functions; Fatou and Julia sets
32H50 Iteration of holomorphic maps, fixed points of holomorphic maps and related problems for several complex variables
11S85 Other nonanalytic theory

Keywords:

iteration; p-adic field; equidistribution theorem; rational mappings; mixing invariant probability measure; asymptotic distribution; Julia set

Full Text: DOI

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paper as accurately as possible without claiming the completeness or perfect precision of the matching.