

1116-11-1181 **Rafe Jones*** (rfjones@carleton.edu) and **Alon Levy**. *Eventually stable rational functions*.

Let K be a field, f a rational function with coefficients in K , and $\alpha \in K$. We say that the pair (f, α) is eventually stable over K if the number of irreducible factors of the numerator of $f^n(x) - \alpha$ is bounded as n grows, where $f^n(x)$ denotes the n th iterate of f . This is a natural finiteness condition that should hold in great generality: we conjecture that a given pair (f, α) is eventually stable unless α is periodic under f . We summarize what little is known in the direction of this conjecture, and in the process give several equivalent conditions for eventual stability. We also give a new result showing that pairs (f, α) satisfying a weak version of the Eisenstein criterion are eventually stable. (Received September 17, 2015)