Robin Zhang* (rzhang@math.columbia.edu). The Galois-dynamics correspondence for unicritical polynomials.

We study a correspondence between Galois actions and dynamical actions on periodic points of the polynomial $\phi(z) = z^d + c$ with $d$ an integer greater than 1 and $c$ a rational number. In particular, this correspondence exists for almost all rational $c$ by a form of Hilbert’s irreducibility theorem. When $K$ is a quadratic number field and $d = 2$, this correspondence gives a criterion for the nonexistence of $K$-rational 5-cycles of $z^2 + c$ and for the complete determination of $K$-rational 6-cycles of $z^2 + c$. (Received September 16, 2019)