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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)