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Richard J Brown* (brown@math.jhu.edu). *The algebraic entropy of the automorphism group of a cubic polynomial on \mathbb{R}^3 .*

We calculate the dynamical degree, or algebraic entropy of the automorphism group of the real cubic polynomial

$$k(x, y, z) = x^2 + y^2 + z^2 - xyz - 2.$$

We also show that there is a connection between this dynamical invariant and the maximum topological entropy of the action when restricted to the compact components of the level sets of k . These polynomial automorphisms of \mathbb{R}^3 arise from an action of the mapping class group of a punctured torus on the real points of the $SL(2, \mathbb{C})$ -character variety of the surface. (Received September 16, 2007)