Thurston eigenvalues: a spectral gap

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In the 1980s, William Thurston established his topological characterization of rational maps, one of the central results in the field of holomorphic dynamics. Thurston's theorem applies to postcritically finite rational maps (a rational map is postcritically finite if the orbit of every critical point eventually lands in a periodic cycle). Given such a rational map, one can define a holomorphic endomorphism of an associated complex manifold. This endomorphism has a unique fixed point, and the eigenvalues of the derivative at this fixed point are all algebraic. Not much is known in general about these eigenvalues. We prove there is a sizable "spectral gap" in the case of quadratic polynomials. The general situation is still quite mysterious. This is joint work with X. Buff and A. Epstein.