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*A Dynamical Mordell-Lang conjecture for coherent sheaves*

We discuss work of Dan Rogalski and Sue Sierra on homological transversality and show that conjectures from noncommutative projective geometry lead naturally to a general dynamical Mordell-Lang conjecture for a variety with an associated endomorphism that can be phrased in terms of vanishing of Tor groups. We give an overview of our conjecture and its relation to the ordinary dynamical Mordell-Lang conjecture. We prove our conjecture in the case of projective surfaces with an automorphism or for general varieties with an associated automorphism that lies in an algebraic group. This is joint work with Matt Satriano and Sue Sierra.