

A Dynamical Shafarevich Theorem for Rational Maps over Number Fields and Function Fields

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We prove a dynamical Shafarevich theorem on the finiteness of the set of isomorphism classes of rational maps with fixed degeneracies. More precisely, fix an integer $d > 2$ and let K be either a number field or the function field of a curve X over a field k , where k is of characteristic zero or $p > 2d - 2$ that is either algebraically closed or finite. Let S be a finite set of places of K . We prove the finiteness of the set of isomorphism classes of rational maps over K with a natural kind of good reduction outside of S . We also prove auxiliary results on finiteness of reduced effective divisors in \mathbb{P}_K^1 with good reduction outside of S and on the existence of global models for rational maps. This is a report on work with T. Tucker and Lloyd West.