

On a dynamical version of a theorem of Rosenlicht

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Abstract. Consider the action of an algebraic group G on an irreducible algebraic variety X defined over a field k . M. Rosenlicht showed that orbits in general position in X can be separated by rational invariants. We prove a dynamical analogue of this theorem, where G is replaced by a semigroup of dominant rational maps $X \dashrightarrow X$. Our semigroup G is not required to have the structure of an algebraic variety and can be of arbitrary cardinality. This generalizes earlier work of E. Amerik and F. Campana, where $k = \mathbb{C}$ and the semigroup G is assumed to be generated by a single endomorphism.

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