

Rational periodic points for quadratic maps

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Let K be a number field. Let S be a finite set of places of K containing all the archimedean ones. Let R_S be the ring of S -integers of K . We consider endomorphisms of \mathbb{P}^1 of degree 2, defined over K , with good reduction outside S (a definition involving the resultant of two polynomials). We will show that there exist only finitely many such endomorphisms, up to conjugation by $\mathrm{PGL}_2(R_S)$, admitting a periodic point in $\mathbb{P}^1(K)$ of order ≤ 3 . Also, all but finitely many classes with a periodic point in $\mathbb{P}^1(K)$ of order 3 are parametrized by an irreducible curve.