

1026-11-45

Lucien Szpiro* (lszpiro@gc.cuny.edu), CUNY Graduate Center PhD program in,
Mathematics, 365 Fifth Avenue, New York, NY 10016. *A Shafarevich- Faltings finiteness theorem
for rational maps (work with T.Tucker).*

Using an alternative notion of good reduction that we call critical good reduction, an analog of the Shafarevich theorem for elliptic curves is proven for morphisms of the projective line over number fields:

Let S be a finite set of finite places in a number field K , let n be an integer greater than one, and let $g : \mathbb{P}_K^1 \xrightarrow{\sim} (\mathbb{P}_{\mathfrak{o}_S}^1)_K$ be an isomorphism. There are finitely many g -equivalence classes of nonconstant morphism $\varphi : \mathbb{P}_K^1 \rightarrow \mathbb{P}_K^1$ of degree n that ramify at three or more points and have critically good reduction at all finite places outside of S . (Received January 28, 2007)