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Bianca A Thompson* (bat7@hawaii.edu). *Rational maps with \mathbb{Q}_p critical points.* Preliminary report.

In prior work by Eremenko and Gabrielov it is shown that if all critical points of a rational function ϕ are real, then ϕ is equivalent to a real rational function. We can reframe the question in the local field \mathbb{Q}_p . We prove a rational map ϕ of degree $d \geq 2$ with exactly 2 distinct critical points in \mathbb{Q}_p is equivalent to a \mathbb{Q}_p -rational function. Similarly, if ϕ is a degree 3 map with 4 critical points in \mathbb{Q}_p it is equivalent to a \mathbb{Q}_p -rational function. (Received August 21, 2014)