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**Juan Rivera-Letelier\*** ([riveraletelier@math.brown.edu](mailto:riveraletelier@math.brown.edu)). *Ergodic theory of  $p$ -adic rational maps.*

The topological entropy is one of the most important invariants of a topological dynamical system. It has been known since the late 1970s that the topological entropy of a rational map acting on the Riemann sphere is equal to the logarithm of its degree. However, this is not true for a  $p$ -adic rational map acting on Berkovich's projective line: the topological entropy could be zero and it is difficult to compute in general. We show a rigidity result for a  $p$ -adic rational map whose equidistribution measure does not charge the wildly ramified locus: if the topological entropy is not equal to the logarithm of its degree (as in the complex case), then the rational map possesses a smooth invariant metric. This is a work in progress with Charles FAVRE. (Received September 20, 2011)