

1109-37-287

Terrence M. Adams and **Cesar E. Silva***, Department of Mathematics and Statistics, Williams College, Williamstown, MA 01267. *Weak Rational Ergodicity Does Not Imply Rational Ergodicity.*

We extend the notion of rational ergodicity to β -rational ergodicity for $\beta > 1$. Given $\beta \in \mathbb{R}$ such that $\beta > 1$, we construct an uncountable family of rank-one infinite measure preserving transformations that are weakly rationally ergodic, but are not β -rationally ergodic. The established notion of rational ergodicity corresponds to 2-rational ergodicity. Thus, this paper answers an open question by showing that weak rational ergodicity does not imply rational ergodicity. (Received February 03, 2015)