

1095-37-209

**Andrew Torok\*** (torok@math.uh.edu) and **Viorel Nitica**. *Stable transitivity for Heisenberg group extensions of hyperbolic systems.*

Consider skew-extensions with fiber the standard real Heisenberg group  $\mathcal{H}_n$  of a uniformly hyperbolic dynamical system. We show that among the  $C^r$  extensions ( $r > 0$ ) that avoid an obvious obstruction, those that are topologically transitive contain an open and dense set. More precisely, we show that an  $\mathcal{H}_n$ -extension is transitive if and only if the  $\mathbb{R}^{2n}$ -extension given by the abelianization of  $\mathcal{H}_n$  is transitive.

In order to obtain this we prove a Diophantine approximation result for simultaneous solutions of a quadratic form and several linear forms. (Received September 09, 2013)