

1038-37-81

Dave Witte Morris* (Dave.Morris@uleth.ca), Department of Mathematics & Computer Science, University of Lethbridge, Lethbridge, Alberta T1K 3M4, Canada. *Amenable groups that act on the line.*

Let G be a discrete group. It is obvious that if there is a homomorphism from G onto the infinite cyclic group \mathbb{Z} , then G has a nontrivial action on the real line (by orientation-preserving homeomorphisms). The converse is not true in general, but, using an idea of É. Ghys, we will prove that the converse is true for all amenable groups that are finitely generated. The proof is surprisingly easy, and combines amenability with elementary topology, the theory of left-ordered groups, and the Poincaré Recurrence Theorem. (Received January 29, 2008)