

1046-11-1526

Nimish A Shah* (nimish@math.tifr.res.in), Department of Mathematics, Yale University, P.O. Box 208283, New Haven, CT 06520-8283. *Expanding translates of curves and Dirichlet-Minkowski theorem on linear forms.*

We show that a multiplicative form of Dirichlet's theorem on simultaneous Diophantine approximation as formulated by Minkowski, cannot be improved for almost all points on any analytic curve on \mathbb{R}^k which is not contained in a proper affine subspace. Such an investigation was initiated by Davenport and Schmidt in the late sixties.

Based on an observation by Kleinbock and Weiss, the problem reformulates as a question about equidistribution of expanding translates of curves on the space of unimodular lattices on \mathbb{R}^n . We prove the equidistribution statement using Dani-Margulis nondivergence criterion, Ratner's classification of ergodic invariant measures, linearization techniques and new linear dynamical observations. (Received September 15, 2008)