Title: Limiting distributions of expanding translates of a curve on $SO(n, 1)/\Gamma$

Abstract: Earlier, to address a problem of counting integral points on homogeneous varieties, it was shown that if we translate an invariant probability measure on a closed orbit of a subgroup on the homogeneous space $SL(n, \mathbf{R})/SL(n, \mathbf{Z})$, by a divergent sequence of elements of $SL(n, \mathbf{R})$, then the translated measures tend to become uniformly distributed in the ambient space, unless there is a well specified algebraic relation between the subgroup and the translating sequence.

We want to show that such a phenomenon also holds when the parametric measure on a compact piece of an analytic curve on a homogeneous space $SO(n, 1)/\Gamma$ is translated by a divergent sequence of elements of SO(n, 1). In particular, let a finite piece of an analytic curve in a compact hyperbolic space evolve under the geodesic flow. Then the curve will get stretched, and spread uniformly in the whole space in the limit, unless the curve satisfies a nice geometric condition. It is of interest to note that the definition of the measure does not involve any group theoretic information. The proof makes crucial use of Ratner's theorem about unipotent flows. There is a scope for such results to be valid in greater generality, and for their applications.