

Abstract:

Higher rank diagonalizable actions show in contrast to rank one actions interesting rigidity phenomena, which can be utilized in equidistribution problems. We will show higher dimensional analogues of Duke's theorem for cubic number fields and under some congruence conditions extensions of Duke's theorem concerning the simultaneous equidistribution of integer points on spheres and the shape of the lattice in the orthogonal complement. This is joint work partly with M. Aka and U. Shapira and partly with E. Lindenstrauss, Ph. Michel, and A. Venkatesh.