



Mathematics > Geometric Topology

# Covolumes of nonuniform lattices in $PU(n, 1)$

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This paper studies the covolumes of nonuniform arithmetic lattices in  $PU(n, 1)$ . We determine the smallest covolume nonuniform arithmetic lattices for each  $n$ , the number of minimal covolume lattices for each  $n$ , and study the growth of the minimal covolume as  $n$  varies. In particular, there is a unique lattice (up to conjugacy) in  $PU(9, 1)$  of smallest Euler--Poincaré characteristic amongst all nonuniform arithmetic lattices in  $PU(n, 1)$ . We also show that for each even  $n$ , there are arbitrarily large families of nonisomorphic maximal nonuniform lattices in  $PU(n, 1)$  of equal covolume.

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