

1145-11-2048      **Katie Lynn McKeon\*** ([katie.mckeon@rutgers.edu](mailto:katie.mckeon@rutgers.edu)). *Low-lying geodesics in a hyperbolic 3-manifold.*

We'll examine closed geodesics in the quotient of hyperbolic three space by the discrete group of isometries  $SL(2, \mathbb{Z}[i])$ . There is a correspondence between closed geodesics in the manifold, the complex continued fractions originally studied by Hurwitz, and binary quadratic forms over the Gaussian integers. According to this correspondence, a geodesic is called fundamental if the associated binary quadratic form is. Using techniques from sieve theory, symbolic dynamics, and the theory of expander graphs, we show the existence of a compact set in the manifold containing infinitely many fundamental geodesics. (Received September 24, 2018)