Conference Ball Quotient surfaces and Lattices

Julien Paupert :

Presentations for cusped arithmetic hyperbolic lattices

We present a general method to compute a presentation for any cusped arithmetic hyperbolic lattice Γ, applying a classical result of Macbeath to a suitable Γ-invariant horoball cover of the corresponding symmetric space. As applications we compute presentations for the Picard modular groups $\mathrm{PU}(2,1,\mathcal{O}_d)$ for $d = 1, 3, 7$ and the quaternionic lattice $\mathrm{PU}(2,1,\mathcal{H})$ with entries in the Hurwitz integer ring $\mathcal{H}$. This is joint work with Alice Mark.