

Height Estimates for Bianchi Groups

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Consider the action of Bianchi groups on the hyperbolic space \mathbb{H}^3 . We obtain, for the case with class number 1, an upper estimate for the height of a matrix that takes a point in \mathbb{H}^3 into the fundamental domain of the group. Siegel sets were used as auxiliary sets in this computation. As a corollary, fixed a Bianchi group, we give an estimate for the number of possible intersections of any Siegel set with their translates by the group. We can also give an estimate for the height of matrices that reduce positive binary quadratic Hermitian forms.