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*Geometry of log-unit lattices*

The log-unit lattice of a number field is the image of the units of the ring of integers under Minkowski embedding in $\mathbb{R}^n$. Computing the log unit lattice (or a fundamental unit) of a number field is a hard problem and is linked to the problem of computing class numbers which is one of the main tasks of computational algebraic number theory. Knowing the geometry of these lattices may help us to find better ways to compute them.

In this talk, we will discuss the geometry of these lattices. Among different properties, orthogonality and well-roundedness of these lattices are two properties that are more interesting to us. As an example, we will discuss the geometry and shortest vectors of log-unit lattices of totally real biquadratic fields. This is an ongoing project with Jose Cruz.