
FATEMEH JALALVAND, University of Calgary

Shape of log-unit lattices in D_6 fields

Lattices play an important role in modern mathematics and are essential in Minkowski's geometry of numbers, the sphere-packing problem in Euclidean space, and arithmetic statistics. The shape of a lattice is defined to be its equivalence class up to isometries and homotheties. In number theory, an important class of lattices are log-unit lattices, and a deeper understanding of them leads to new perspectives on computational problems in number fields. In this talk, I will describe the shapes and geometry of log-unit lattices arising from D_6 sextic number fields of signature $(0, 3)$. This work is a result of the TeamsUp! project (25frg504), available at: <https://www.birs.ca/events/2025/focussed-research-groups/25frg504>.