



Oberseminar Institut für Algebraische Geometrie

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Practical computations with indefinite forms.

An indefinite lattice is a integral valued quadratic form on Z^n of signature (p, q) with $p, q > 0$. We consider following problems for them:

1. Compute a generating set of the group of invertible integral transformations preserving q .
2. Given two forms A_1 and A_2 test if there is an invertible integral transformation ϕ such that $A_2[x] = A_1[\phi(x)]$.
3. Given $C \neq 0$ find the orbit representatives of solutions of $A[x] = C$.
4. Find the orbit representatives of solutions of $A[x] = 0$ with x primitive.
5. For $k \geq 2$ find the orbit representatives of k totally isotropic planes.

We provide some methods that allow to resolve such questions. This is based on polyhedral, lattice, group theoretic techniques. If time allows I will also explain how the edge walk algorithm of Allcock gives a subgroup of $Aut(L)/Cox(L)$.

Dienstag, 06.09.2022

11:15 - 12:15, Raum B302

Leibniz Universität Hannover

Alle Interessierten sind herzlich eingeladen.