

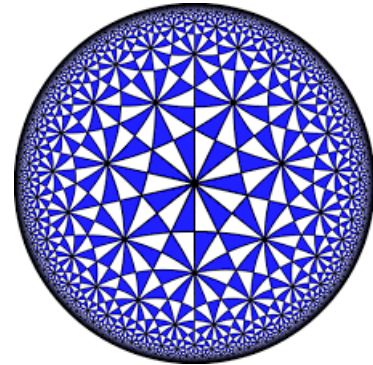
## Oberseminar Geometrie

Department of Mathematics

University of Fribourg

Seminar Room 0.05 PER23

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### Lattices of minimal co-volume in some Lie groups of higher rank

The question of identifying the lattices (i.e. discrete subgroups of finite co-volume) of minimal co-volume in Lie groups has a long history starting with the work of C.-L. Siegel who showed that the  $(2,3,7)$ -triangle group is the unique lattice (up to conjugation) of minimal co-volume in the special linear group  $\mathrm{PSL}_2(\mathbb{R})$ . By a recent result of F. Thilmany a similar uniqueness result holds for the group  $\mathrm{PSL}_n(\mathbb{R})$  with  $n > 2$ , where the minimal co-volume lattice is (a conjugate of)  $\mathrm{PSL}_n(\mathbb{Z})$ . Similar, partly weaker, results are known for other (simple) Lie groups by the work of many mathematicians such as Gehring-Martin, Belolipetsky, Belolipetski- Emery, Emery-Stover, Emery-Kim.

In my talk I would like to report on the joint project with K. Holm and R. Köhl on minimal co-volume lattices in the (split) symplectic group. If the time permits I will also briefly discuss a related question on minimal co-volume irreducible lattices in non-simple Lie groups such as  $\mathrm{PSL}_2(\mathbb{R})^n$ .