

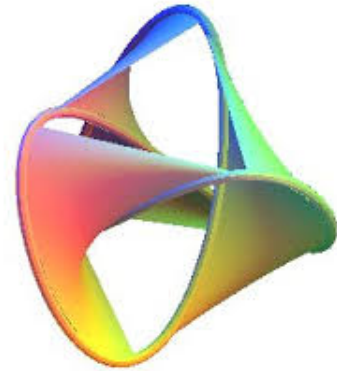
Oberseminar Geometrie

Department of Mathematics

University of Fribourg

Physics 2.52

Wednesday, 27 March 2024, 10:20



MENNY AKKA (ETH ZÜRICH)

Seifert surfaces, planes in four space, and Gauss composition

In this talk I will present results from a recent joint work with Peter Feller, Alison Beth Miller and Andreas Wieser;

<https://arxiv.org/abs/2311.17746>

I will first present a geometric approach to the classical Gauss composition of binary quadratic forms. The new method is based on a parametrisation of two-dimensional subspaces of the space of 2×2 matrices and provides an easy to remember way to compute the Gauss composition.

This approach naturally leads to a robust construction of pairs of Seifert surfaces for the same knot that are non-isotopic in the 4-ball. It also provides a complete characterisation of the Seifert forms of such disjoint Seifert surfaces. These topological results will be discussed in the second part of the talk.

Time permitting, I will sketch related equidistribution problems that motivated and are motivated by the above results.

No background in number theory, knot theory or dynamical systems will be assumed.