

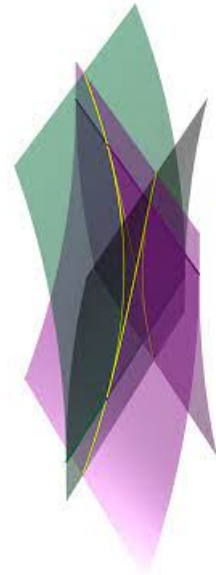
## Oberseminar Geometrie

Department of Mathematics

University of Fribourg

**PER08 Physics 2.52**

**Tuesday, 31 October 2023, 15:15-17:00**



CHI CHEUKS TSANG (CRM MONTREAL)

## Pseudo-Anosov maps, dilatations, and veering triangulations

A pseudo-Anosov map is a surface homeomorphism that acts with similar dynamics as a hyperbolic element of  $SL_2\mathbb{R}$  on  $\mathbb{R}^2$ . A classical result of Nielsen and Thurston shows that these are surprisingly prevalent among mapping classes of surfaces. The dilatation of a pseudo-Anosov map is a measure of the complexity of its dynamics. It is another classical result that the set of dilatations among all pseudo-Anosov maps defined on a fixed surface has a minimum element. This minimum dilatation can be thought of as the smallest amount of mixing one can perform on the surface while still doing something topologically interesting. The minimum dilatation problem asks for this minimum value.

In this talk, we will present some recent progress on a version of the minimum dilatation problem concerning fully-punctured pseudo-Anosov maps. In the first part of the talk, we will provide some background of pseudo-Anosov maps and the minimum dilatation problem. In the second part of the talk, we will go into some technical details about one ingredient of the proof, namely, how one can obtain a bound on the number of tetrahedra in the layered veering triangulation associated to a fully-punctured pseudo-Anosov map with small normalized dilatation.