

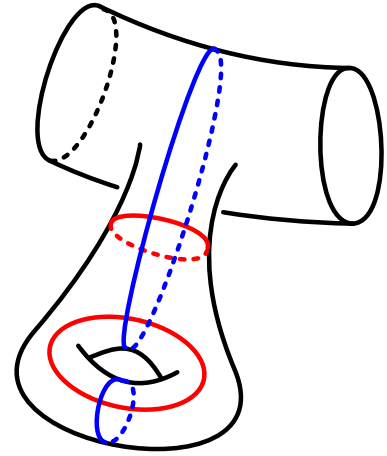
Oberseminar Geometrie

Department of Mathematics

University of Fribourg

Seminar Room 0.05 PER23

Wednesday, 29 November 2023, 10:20



LIVIO LIECHTI (UNIFR)

Asymptotically optimal multicurve intersection degrees

Let M be an integer square matrix with at least one simple eigenvalue, and let N be its principal submatrix obtained by deleting the first row and the first column. We show that if the spectra of M and N are disjoint, then there are infinitely many ways to change the top left coefficient of M so that its characteristic polynomial becomes irreducible. This criterion applies flawlessly to oscillatory matrices, but also to certain well-chosen classes of Perron-Frobenius matrices. In the second part of the talk, we will apply the criterion to describe the asymptotically optimal degrees of spectral radii of intersection matrices built from pairs of filling multicurves on closed orientable surfaces: the ratio between the highest obtainable degree and the genus converges to 3 as the genus tends to infinity. This is joint work with Erwan Lanneau.