BERN-FRIBOURG GRADUATE SEMINAR

a seminar for Master and PhD students

Thursday 14th March, 2024: 17:15 - 18:00 Room 2.52, Perolles 08, Fribourg

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Crossing number of curves on surfaces

Abstract

Given a system of pairwise non-homotopic, simple closed curves on a surface, a quantity one may consider is their total number of intersection points, their so-called crossing number. An interesting problem regarding curve systems and their crossing number is the following: Given a surface and a fixed number k, what is the minimal crossing number of any k pairwise non-homotopic, simple closed curves? In this talk, we look at minimising systems of up to 12 curves on a surface of genus 2 and their – perhaps surprising – properties. If time permits, we discuss more general results concerning higher genus surfaces and asymptotic behaviour. The primary purpose of this talk is to enjoy the beautiful world of curves and crossing numbers; there is (almost) no previous knowledge required to follow this talk.