

Seminarium geometrów

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k -intersecting curve and arc systems on surfaces

Abstract: A k -intersecting family of arcs on a surface with boundary S is a collection of essential arcs between the boundary components, such that no two are homotopic, and such that the arcs pairwise intersect at most k times. We can also look at closed curves in place of arcs when the surface is closed. In this expository talk, I will talk about some elementary results in the field, and then discuss some cardinality results of P. Przytycki and C. Smith about the maximal cardinality of 1- and 2-intersecting families of arcs, and show how these can give interesting upper bounds on 1-intersecting families of curves on closed surfaces. If time permits, I will also show some ideas about finding the precise maximal number of 1-intersecting curves on the genus g surface.