

## ABSTRACT:

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### Counting curves on surfaces

Let  $S$  be a surface of genus  $g$  and  $r$  punctures, and  $c$  a (not necessarily simple) closed curve on  $S$ . Consider the set of curves in the mapping class group orbit of  $c$ . Recently, Mirzakhani has shown that when  $S$  is endowed with a hyperbolic metric, the cardinality of the subset defined by the curves with length bounded by  $L$  is asymptotic to a constant times  $L^{6g-6+2r}$ , as  $L$  grows. In this talk we discuss the asymptotic growth of subsets with bounded complexity, for different notions of complexity. For example, the curves with bounded length with respect to any negatively curved metric or (when  $r > 0$ ) the word metric, as well as curves having bounded intersection number with some other curve. This is joint work with Juan Souto.