

# Fluctuations in the number of points of curves over finite fields

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007 Kemeny Hall, 4:00 pm  
(Tea 3:30 pm 300 Kemeny Hall)

## Abstract

We study in this talk the distribution of the number of points for two families of curves over a finite field with  $q$  elements: cyclic covers of  $\mathbb{P}^1$  and smooth plane curves. The Katz-Sarnak philosophy makes predictions about the statistics for such families in the large  $q$  limit when the genus is fixed. We are looking at the complementary statistics, when the genus varies, but the field of definition is fixed. In that case, one can obtain statistics for the distribution of the number of points by sieving the families of curves.

This is joint work with A. Bucur, B. Feigon and M. Lalin.