Jean-Morlet Chair - Conference

Arithmetic Statistics - Statistiques arithmétiques

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Title: *On the distribution of curves over finite fields according to their number of rational points*

Abstract: In this talk we will go beyond Katz-Sarnak theory on the distribution of curves over finite fields according to their number of rational points, theoretically, experimentally and conjecturally. In particular, we will give a formula for the limits of the moments measuring the asymmetry of this distribution for (non-hyperelliptic) curves of genus $g \geq 3$. The experiments point at a stronger notion of convergence than the one provided by their framework for all curves of genus ≥ 3. However for elliptic curves or for hyperelliptic curves of any genus, we prove that this cannot occur.