

Jean-Morlet Chair - Conference
Arithmetic Statistics - Statistiques arithmétiques

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Title: *q-Frobenius distributions of abelian varieties*

Abstract: Fix a g -dimensional abelian variety A defined over a finite field \mathbb{F}_q . For every integer $r \geq 1$, consider the extension of scalars $A_{(r)} = A \times_{\mathbb{F}_q} \mathbb{F}_{q^r}$. We study the distribution of the normalized trace of the Frobenius endomorphism of $A_{(r)}$ in the compact interval $[-2g, 2g]$, as r varies. We show that these distributions are controlled by a certain compact abelian Lie group, and classify the possible groups when $g \leq 3$.

This is joint work with Deewang Bhamidipati and Soumya Sankar.