

# Number Theory Days 2017

Saturday June 3<sup>rd</sup>, 2017 at 09h30 (room CE 2)

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## Multiplicative functions and rational points in families of varieties

(Joint work with Daniel Loughran.) Given a family of varieties over  $\mathbb{Q}$ , we consider the problem of counting the number of varieties in this family which have a rational point. For suitable families over  $\mathbb{P}^1$ , we will show how to obtain correct order lower bounds for this counting problem and thereby answer a question of Serre.

The proof involves multiplicative functions and uses techniques from additive combinatorics and arithmetic geometry.

