

Jean-Morlet Chair - Conference
Arithmetic Statistics - Statistiques arithmétiques

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Title: *Geometry-of-numbers in the cusp, and class groups of orders in number fields*

Abstract: In this talk, we discuss the distributions of class groups of orders in number fields. We explain how studying such distributions is related to counting integral orbits having bounded invariants that lie inside the cusps of fundamental domains for coregular representations. We introduce two new methods to solve this counting problem, and as an example, we demonstrate how these methods can be used to determine the average size of the 3-torsion in the class groups of real or complex quadratic orders, among other applications.

Much of this work is joint with Arul Shankar, Artane Siad, and Ila Varma.