Theoretical Statistics and Mathematics Unit, Kolkata
Indian Statistical Institute

LECTURE SERIES
ON
THE SELBERG SIEVE AND THE LARGE SIEVE

By

Olivier Ramaré
CNRS / Institut de Mathématiques de Marseille
Aix Marseille Université, France

DATE:
Lecture 1: Jan 20, 2025
Lecture 2: Jan 22, 2025
Lecture 3: Jan 24, 2025

TIME:
11:00 AM to 01:00 PM

VENUE:
L- Infinity
(5th Floor, A.N. Kolmogorov Bhavan), ISI Kolkata

TITLE:
Three extreme developments on the Selberg and the large sieve

ABSTRACT:

The Selberg sieve is often twisted via the use of an auxiliary polynomial to act in a finite dimensional context. In the first lecture, we will see how to use the Selberg sieve for the squares and deduce a Chang's theorem on dense subsets of the squares.

The second lecture will deal with a functional analytic interpretation of the large sieve quantity in line with the Bombieri-Davenport inequality.

In the third lecture, we will see how to interpret the density yielded by the Selberg sieve as a distance between a point and a subspace of functions. This interpretation leads to the best known version of the Brun-Titchmarsh inequality for intervals.

ALL ARE CORDIALLY INVITED