



## Theoretical Statistics and Mathematics Unit

Indian Statistical Institute

203 B.T. Road, Kolkata - 700108

### SEMINAR

**Date:** August 20 2026

**Time:** 4:30 PM

#### VENUE:

L-Infinity, 5<sup>th</sup> Floor, A.N. Kolmogorov Bhavan, ISI Kolkata

#### SPEAKER:

**Pratim Mitra**

Stat-Math Unit, ISI Kolkata

#### TITLE:

**The subconvexity problem for symmetric-square L-functions in level aspect**

#### ABSTRACT:

In this seminar, we address the subconvexity problem in the level aspect for symmetric square  $L$ -functions of cuspidal automorphic representations of  $\mathrm{GL}_2(\mathbb{Q})$  with a prescribed ramification at a prime  $p$ . To be more precise, let  $\pi$  be a tempered representation of conductor  $q(\pi) = p^2$  with a unitary central character of conductor  $p$ . We prove that if the corresponding local representation  $\pi_p$  belongs to a suitable class of representations  $\mathcal{S}$ , then for any  $\varepsilon > 0$ ,

$$L\left(\frac{1}{2}, \mathrm{Sym}^2 \pi\right) \ll_{\varepsilon, \pi_\infty} q(\mathrm{Sym}^2 \pi)^{\frac{1}{4} - \frac{1}{168} + \varepsilon},$$

where the implied constant depends on  $\varepsilon$  and the Archimedean component  $\pi_\infty$ . This is the first instance of a level-aspect subconvex bound for  $L$ -functions of  $\mathrm{GL}_3(\mathbb{Q})$  automorphic representations. Our method is based on the delta-symbol approach. Apart from standard analytic number-theoretic tools, Katz's theory of hypergeometric sheaves and Deligne's proof of the Weil conjectures play an important role in the proof.

ALL ARE CORDIALLY INVITED

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