



INDIAN STATISTICAL INSTITUTE
Theoretical Statistics and Mathematics Unit
Kolkata 700108

LECTURE

Date: **12th June 2023, Monday**

Time: **12:00 Noon**

Venue: **L-Infinity**

5th Floor, A N Kolmogorov Bhavan,
Theoretical Statistics and Mathematics Unit
Indian Statistical Institute, Kolkata 700108

TITLE

S-ADIC DIOPHANTINE APPROXIMATION AND FRACTAL MEASURES

SPEAKER:

Shreyasi Datta

University of Michigan, Ann Arbor

ABSTRACT:

I will focus on Diophantine approximation on \mathbb{Q}_p , and more generally on $\mathbb{Q}_p \times \mathbb{R}$, $\mathbb{Q}_p^1 \times \mathbb{Q}_p^2$ and so on. This kind of metric number theory has been studied by various mathematicians starting with Mahler, Jarnik, and extended heavily by Lutz. After reviewing recent developments in this area, I want to concentrate on recent work with Victor Beresnevich and Anish Ghosh.

We showed that the pushforward of a p -adic fractal measure by ‘nice’ functions exhibits ‘nice’ Diophantine properties, settling a conjecture of Kleinbock and Tomanov. In particular, we prove p -adic analogue of a result by Kleinbock, Lindenstrauss and Weiss on friendly measures. I will talk about how the lack of the mean value theorem makes life difficult in the p -adic fields and how we can sometimes overcome this problem.

ALL ARE CORDIALLY INVITED