



ICTS

INTERNATIONAL
CENTRE *for*
THEORETICAL
SCIENCES

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

Bangalore Probability Seminar

Title : Local algorithms, Conway-Lagarias-Thurston tiling groups and finitely dependent processes.

Speaker (S) : Nishant Chandotia (TIFR-CAM) and Aditya Thorat (ICTS-TIFR)

Date : Monday, 05 October 2026

Time : 2:00 - 2:50 pm and 3:00-3:50 pm

Abstract : Suppose you were given a set of tiles T on the integer lattice $\mathbb{Z}^2$ and wanted to find out whether a given region can be tiled by T . Conway, Lagarias and Thurston paved the way for answering such a question via some tools coming from combinatorial group theory and analysis. On the other hand suppose you were just given some tiles on a sparse but dense set of locations in $\mathbb{Z}^2$ and you wanted to know if T can complete the tiling by looking at what is given locally. The answer to this question comes from local algorithms starting with work by Nathan Linial (and further back). Interestingly, these cover complementary cases and are related to a host of questions arising from symbolic and Borel dynamics, probability and combinatorics. We will try to give a gentle introduction to these topics and describe how they relate to finitely dependent processes.

Venue : Emmy noether seminar hall

Zoom Link: <https://us02web.zoom.us/j/88670406480>

Meeting ID: 886 7040 6480