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INTERNATIONAL
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TATA INSTITUTE OF FUNDAMENTAL RESEARCH

ICTS Seminar

Title : Spectral gaps for non-spherical representations on hyperbolic manifolds

Speaker : Vikramaditya Giri (University of Zurich)

Date : Thursday, 01 October 2026

Time : 11:30 AM (IST)

Abstract : The spectrum of the Laplace-Beltrami operator acting on functions on a hyperbolic manifold tells us a great deal about its underlying geometric and topological properties. However, from the point of view of representation theory, this is just a portion of the full right regular representation, namely they are all spherical representations. In this talk, we discuss the non-spherical representations for (spin) hyperbolic surfaces (eg.: spinors) and hyperbolic 3-manifolds (eg.: 1-forms) and construct examples with uniform spectral gaps and discuss some applications.

Based on joint works with Amina Abdurrahman, Anshul Adve, Ben Lowe and Jonathan Zung.

Venue : Madhava Lecture Hall

Zoom Meeting: <https://icts-res-in.zoom.us/j/93627770536?pwd=KFO6gsGTA9ykMbGmgZLbaVTI0OcBoV.1>

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