EFFECTIVE MULTI-EQUIDISTRIBUTION FOR TRANSLATES OF UNIPOTENT FLOWS AND CENTRAL LIMIT THEOREMS IN INHOMOGENEOUS DIOPHANTINE APPROXIMATION

Speaker: Anish Ghosh

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Time： Wednesday, June. 10th, 15:00-16:00
Venue: Room 102, SCMS

Abstract:

I will talk about a recent joint work with Das and Aggarwal. We prove Central Limit Theorem for inhomogeneous Diophantine approximation with a fixed shift, provided the shift is non-Liouville. This generalizes earlier work of Dolgopyat, Fayad, and Vinogradov. This is achieved by translating the problem to one involving flows on homogeneous spaces. In this latter setting, we establish an effective multi-equidistribution result for diagonal translates of unipotent flows. This result is obtained by combining a recent result of Kim with the height function construction of Shi. The central limit theorem is then deduced using the method of Björklund and Gorodnik.