

The tenth Takagi Lectures

May 26 (Sat), 2012

10:05–11:05, 14:00–15:00

Lecture Hall (Room No. 420)

Research Institute for Mathematical Sciences

Kyoto University, Kyoto, Japan

Random Walks on Homogeneous Spaces

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Abstract

Let a_0 and a_1 be two matrices in $SL(2, \mathbb{Z})$ which span a non-solvable group. Let x_0 be an irrational point on the torus \mathbb{T}^2 . We toss a_0 or a_1 , apply it to x_0 , get another irrational point x_1 , do it again to x_1 , get a point x_2 , and again. This random trajectory is equidistributed on the torus. This phenomenon is quite general on any finite volume homogeneous space.