DISTINCT DISTANCES ON HYPERBOLIC SURFACES

Fudan Topology Seminar

Speaker: Xianchang Meng
Shandong University

Time: Thur, Mar. 17th, 15:00-17:00
Tencent Meeting ID: 861-8661-7196 **Password: 123555**

Abstract: Erdős (1946) proposed the question of finding the minimal number of distinct distances among any N points in the plane. Guth-Katz (2015) gave almost sharp answer for this question using incidence geometry and polynomial partitioning. We consider this problem in hyperbolic surfaces associated with cofinite Fuchsian groups, i.e. the volume of the surface is finite. We prove a lower bound of the same strength as Guth-Katz. In particular, for any finite index subgroup of the modular group, we extract out the dependence of the implied constant on the index.