早大理エトポロジーセミナーのお知らせ

Symmetries of hyperbolic four-manifolds and combinatorics of simplicial complexes

Alexander KOLPAKOV (Toronto University)

日時: 2014年10月17日(金)午後4時30分~ October 17, 2014 (Friday), 16:30~

場所: 早稲田大学 西早稲田 (理工) キャンパス 5 1 号館 1 8 階 18-02 室 Waseda University, Nishi-waseda campus 51st building, 18th floor, Room 18-02

概要

Abstract

I will speak about my recent results with L. Slavich (University of Pisa). We show that for any finite group G there is a (complete, finite-volume) hyperbolic four-manifold M with the group of symmetries (or self-isometries) Isom $M \cong G$ or Isom⁺ $M \cong G$. Our method uses the geometry of Coxeter polytopes on one hand, and the combinatorics of simplicial complexes on the other. In contrast to the probabilistic methods by Belolipetsky and Lubotzky who found manifolds with given symmetry group in any dimension, we provide an explicit construction with highly controllable geometry and combinatorics. In this way, we can find a volume bound for M in terms of the order of G, partially answering a question by Belolipetsky and Lubotzky.

世話人: 村上 順

e-mail: murakami@waseda.jp

今回は早稲田双曲幾何幾何学的群論セミナーとの共催です.