

Preface

The 7th Seasonal Institute of the Mathematical Society of Japan took place from 30 July to 5 August 2014 at the University of Tokyo, under the title of ‘Hyperbolic geometry and geometric group theory’, which was also one of the satellite conferences of the ICM 2014 Seoul. This volume, having the same title as the event, collects papers submitted by speakers and participants. In recent years, hyperbolic geometry and geometric group theory made great progress hand in hand, and they were duly chosen to be the topic of the MSJ-SI 2014 . There were about 200 participants from both outside and inside Japan, and we hope that the seasonal institute greatly served younger people studying this subject.

There were four survey lectures and twelve invited talks, whose titles and speakers we list below:

- (1) Survey lectures
 - (a) Yair Minsky, Structure and deformations of Kleinian groups
 - (b) Narutaka Ozawa, Introduction to Noncommutative Real Algebraic Geometry
 - (c) Michah Sageev, $CAT(0)$ cube complexes and their group actions
 - (d) Karen Vogtmann, Outer spaces for right-angled Artin groups
- (2) Invited Talks
 - (a) Mladen Bestvina, On the asymptotic dimension of a curve complex
 - (b) Brian Bowditch, Quasi-isometric rigidity of mapping class groups and Weil-Petersson geometry
 - (c) Martin Bridson, Cube complexes and profinite isomorphism
 - (d) Jefferey Brock, On the geometry of random hyperbolic 3-manifolds
 - (e) Kenneth Bromberg, Bounded cohomology with coefficients in uniformly convex Banach spaces
 - (f) Danny Calegari, Roots, Schottky semigroups, and a proof of Bandt’s Conjecture
 - (g) Daniel Groves, The Malnormal Special Quotient Theorem
 - (h) Yoshikata Kida, Stable orbit equivalence relations
 - (i) Sang-hyun Kim, RAAGs in Diffeos
 - (j) Athanase Papadopoulos, On some theorems in hyperbolic geometry
 - (k) Piotr Przytycki, Arcs intersecting at most once

The seasonal institute would not have been possible without the support of the following grants. We sincerely express our gratitude to them. The Mathematical Society of Japan, the Japan Society for the Promotion of Science, and Leading Graduate Course for Frontiers of Mathematical Sciences and Physics, the University of Tokyo.

September, 2016

The Editors

All papers in this volume have been refereed and are in final form. No version of any of them will be submitted for publication elsewhere.