

Sadayoshi KOJIMA

0 Research Summary

- **Comparison of Entropy of Surface Automorphisms and Volume of their Mapping Tori :**

It is probabilistically expected that entropies and volumes are related linearly. We started to study this by introducing quasi-isometric relation on the set of invariants with values in metric spaces. Also, we applied the idea of quasi-isometry to find topology of ends of Teichmüller spaces with low complexity.

- **Moduli Space of Equilateral Pentagons on the plane :**

The moduli space of equilateral pentagons is known to be homeomorphic to a surface of genus 4. I have given a very simple proof to this fact based just on combinatorics. S. Klaus at Oberwolfach gave another new proof to this using real algebraic method a few years ago and we completed a joint paper.

1 Publications

1.1 Papers

1. (with S. Klaus) On the moduli space of equilateral pentagons, Beitr. Algebra Geom., 60 (2019), 487-497.

1.2 Talks

1. None.

1.3 Books

1. None.

2 Research Activities

2.1 Seminars

1. Organize mini-workshop on “Geometry of Surfaces” at Waseda, 2019/05/30
[http : //www.ims.sci.waseda.ac.jp/imgs_events/5.30Workshop.pdf](http://www.ims.sci.waseda.ac.jp/imgs_events/5.30Workshop.pdf)
2. Organize workshop on “Hyperbolic Geometry” at Waseda, 2019/09/02-09/03
[http : //www.ims.sci.waseda.ac.jp/imgs_events/Workshop2019.9.2 – 3.pdf](http://www.ims.sci.waseda.ac.jp/imgs_events/Workshop2019.9.2-3.pdf)

3. Organize mini-workshop on “Low Dimensions” at Waseda, 2019/12/26
[http : //www.ims.sci.waseda.ac.jp/imgs_events/20191226_LD_program.pdf](http://www.ims.sci.waseda.ac.jp/imgs_events/20191226_LD_program.pdf)

2.2 Overseas Travel

1. Attend the symposium on “Combinatorial and Algebraic Aspects of Geometric Structures” held 2019/07/22 - 07/26 at Chiang Mai University in Thailand,
2. Attend the workshop on “Geometric Topology Fair 2019” held 2018/07/28-08/02 at KAIST in Korea.

3 Fundings

1. JSPS Grand for Research Trend Survey, “Academic trend and methods of promotion in mathematical sciences (especially mathematics) - new stream of mathematics and collaboration of mathematics with other fields”, 2019/04 - 2020/03.
2. JSPS Grant-in-Aid for Challenging Exploratory Research, “Invariants of hyperbolic 3-manifolds related with gauge theory”, 2019/04 - 2022/03 (PI : Tomotada Ohtsuki (RIMS))

4 Others

1. Cooperative Member of SCJ, 2008/10 - 2020/09.
2. Senior Program Officer of JSPS RCSS, 2016/04 - 2020/03.
3. Steering Committee Member of RIMS, 2019/09 - 2021/08.
4. Auditor of MSJ, 2010/04 - 2021/05.
5. Councilor of Mathematical Olympiad Foundation of Japan, 2012/06 - 2023/05.
6. Associate Editor of Experimental Mathematics, 2001/11 -
7. Lecturer of ”Frontiers of Science and Technology” at TokyoTech, 2019/04/25 ,05/09
8. Lecturer of ”FMS Special Lecture” at Meiji University, 2019/12/05.