Arnaud Maret

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Curriculum vitæ

October 27, 2021

Employment

Universität Heidelberg, PhD Student of Mathematics, Sep 2018 - present,
Thesis title (provisional): *The symplectic structure of character varieties*,
Supervisors: Prof. Peter Albers & Prof. Anna Wienhard,
Expected graduation date: spring 2022.

Education

- MSc in Mathematics (with distinction), **ETH Zürich**, Sep 2016 - Jun 2018,
  Thesis title: *Forcing relations for periodic orbits of surface homeomorphisms*,
  Supervisor: Prof. Will J. Merry.

- Exchange program, **University of Waterloo**, CA, Sep 2015 - Jun 2016.

- BSc in Mathematics, **EPFL Lausanne**, Sep 2013 - Jun 2016,
  Thesis title: *The Hardy-Littlewood Circle Method and the Waring Problem*,
  Supervisor: Prof. Yu-Ru Liu (University of Waterloo, CA).

Papers and preprint

2. *Action-angle coordinates for surface group representations in genus zero.* 32 pages.
   arXiv:2110.13896.

1. *Ergodicity of the mapping class group action on super-maximal representations.* Submitted, 22 pages. arXiv:2012.05775.

Invited research stays

- (Sep 2021 - Dec 2021) **Institut de Mathématiques de Jussieu, Sorbonne Université**, Paris. Visiting prof. Julien Marché. Funding awarded by RTG 2229 "Asymptotic Invariants and Limits of Groups and Spaces".

- (Aug 2019) *Holomorphic Differentials in Mathematics and Physics* semester program at **MSRI**, Berkley. Funding awarded by MSRI.

Teaching and seminars

- Co-organiser of *Workshop on Positivity in Lie Groups*, IWH Heidelberg, 2022.

- Organiser of *RTG Seminar on Dynamics in one complex variable*, KIT Karlsruhe/Universität Heidelberg, 2021.

- Organiser of *Reading seminar: Infinite dimensional symplectic reduction*, Universität Heidelberg, 2021.

- Co-organiser of *Working seminar: Bridgeland's stability conditions for meromorphic differentials* (with Prof. Pozzetti), Universität Heidelberg, 2020.

- Organiser of *RTG Seminar on Topological K-Theory*, KIT Karlsruhe/Universität Heidelberg, 2020.

- Co-supervisor of *Blockseminar Hyperbolische Geometrie* (Prof. Albers), Universität Heidelberg, 2020.

- Co-organiser of *Seminar on Dynamics of Teichmüller space* (with Prof. Albers & Prof. Wienhard), Universität Heidelberg, 2019.

- Co-organiser of *RTG Seminar on Rational Homotopy Theory*, KIT Karlsruhe/Universität Heidelberg, 2019.

- Co-supervisor of *Proseminar Differentialgeometrie* (Prof. Albers), Universität Heidelberg, 2018.

- Class Tutor for *Wahrscheinlichkeit und Statistik* (Prof. Cheridito), ETH Zürich, 2018.

- Class Tutor for *Analyse 2* (Prof. Krieger), EPFL Lausanne, 2015.

- Class Tutor for *Analyse 1* (Prof. Monod), EPFL Lausanne, 2014.

Seminar and conference talks

11. (Oct 2021) Remarkable surface group representations in genus zero. At Geometry Seminar, ETH Zürich.

10. (Oct 2021) Remarkable surface group representations in genus zero. At Geometry and Topology Seminar, University of Bristol.

9. (Sep 2021) Lightening talk on Deroin-Tholozan representations. At Ventotene International Workshops: Counting problems, Ventotene, Italy.

8. (Jun 2021) Lightening talk on character varieties and mapping class group action. At CMI-HIMR Dynamics and Geometry Online Summer School, University of Bristol.

7. (Apr 2021) Characterization of Anosov representations in terms of signular- and eigenvalues. At Reading Seminar on Anosov representations, University of Virginia.

6. (Oct 2020) K-Theory and stable homotopy groups of spheres. At RTG Seminar on Topological K-Theory, KIT Karlsruhe/Universität Heidelberg.

5. (Nov 2019) Differential calculus on persistence barcodes. At Journal Club - Topological methods in data analysis, Universität Heidelberg.

4. (Mar 2019) Formality of Kähler manifolds. At RTG Seminar on Rational Homotopy Theory, KIT Karlsruhe/Universität Heidelberg.

3. (Jun 2018) Forcing relations for periodic orbits of surface homeomorphisms. At Hauptseminar Symplectische Geometrie, Universität Heidelberg.

2. (Mar 2018) Forcing relations for periodic orbits of surface homeomorphisms. At Symplectic Geometry Seminar, JLU Giessen.

1. (Mar 2018) Forcing relations for periodic orbits of surface homeomorphisms. At Oberseminar Dynamische Systeme, Ruhr-Universität Bochum.

Conferences and workshops attended

- (Jan 2022) Workshop on Positivity in Lie Groups, IWH Heidelberg.

- (Nov 2021) Young researchers meeting of the GDR Platon, CIRM Marseille.

- (Sep 2021) Ventotene International Workshops: Counting problems, Ventotene, Italy.

- (Aug 2021) Workshop on Anosov representations, Aussois, France.

- (Jun 2021) CMI-HIMR Dynamics and Geometry Online Summer School (online), University of Bristol.

- (Jan 2021) Topics at the Interface of Low Dimensional Group Actions and Geometric Structures (online), National University of Singapore.

- (Nov 2020) 15th International Young Researchers Workshop on Geometry, Mechanics and Control (online), Universiteit Utrecht.

- (Oct 2020) Symposium: Mathematics in Sciences, Engineering and Economics (online), KIT Karlsruhe.

- (Oct 2020) Teichmüller Theory: Classical, Higher, Super and Quantum (online), CIRM Marseille.

- (Jun 2020) Nearly Carbon Neutral Geometric Topology Conference (online).

- (Feb 2020) Winter School on Invariant Function Theorems, JLU Giessen.

- (Feb 2020) CAST 2020: XIV Workshop on Symplectic Geometry, Contact Geometry, and Interactions, Universiteit Antwerpen.

- (Nov 2019) Geometric Dynamics Days, RWTH Aachen University.

- (Aug 2019) Workshop on bounded cohomology, Universität Heidelberg.

- (May 2019) Workshop on Geometry, Topology and Computation, Universität Heidelberg.

- (Apr 2019) Graduate school on Geometry of Teichmüller spaces, Simons Center, Stony Brook University, NY.

- (Mar 2019) CAST 2019: XIII Workshop on Symplectic Geometry, Contact Geometry, and Interactions, Humboldt University, Berlin.

- (Mar 2019) Symposium: Geometry, Topology, Analysis and Dynamical systems, Universität Heidelberg.

- (Feb 2019) Geometric Analysis meets Geometric Topology, Universität Heidelberg.

- (Nov 2018) Geometric Dynamics Days, JLU Giessen.

- (Nov 2018) Workshop on Computational Topology and Topological Data Analysis, Heidelberg Institute for Theoretical Studies.

- (Aug 2018) Summer School on Equivariant Symplectic Homology, JLU Giessen.

Extracurricular activities

- Academic director of the Swiss Mathematical Olympiad (SMO), Dec 2017-present.

- Team leader for Switzerland at the International Mathematical Olympiad (IMO), 2016-2018 and 2020.

- Main organizer of the Olympiade Francophone de Mathématiques (OFM), Mar 2021.

- Invited coordinator at the Benelux Mathematical Olympiad (BxMO), Apr 2018.

- Invited coordinator at the European Girls Mathematical Olympiad (EGMO), Apr 2017.

Languages

- French (mother tongue)

- English (fluent)

- German (fluent)