

BEHROUZ TAJI

behrouz.taji@sydney.edu.au | <http://www.maths.usyd.edu.au/u/behrouzt/>

Room 606 School of Mathematics and Statistics F07
Carslaw Building
The University of Sydney
NSW 2006 Australia

EMPLOYMENT

JAN 2019 – present **Lecturer**
The University of Sydney, Australia

AUG 2017 – DEC 2018 **Notre Dame Instructor Postdoctoral Position**
University of Notre Dame, USA

JULY 2014 – SEP 2017 **Postdoctoral research fellow**
University of Freiburg, Germany and Northwestern University, USA

EDUCATION

2009-2014 **PhD in Pure Mathematics**
McGill University, Canada
Advisor: Professor Steven Lu

2007-2008 **Certificate of Advanced Studies in Pure Mathematics (Part III)**
University of Cambridge, UK

2003-2007 **MSci in Mathematics**
Imperial College London, UK

PUBLICATIONS AND PREPRINTS

2021 **Hodge sheaves underlying flat projective families** (with S. Kovács). (*submitted*) eprint: [arXiv:2103.03515](https://arxiv.org/abs/2103.03515)

2020 **Birational geometry of smooth families of varieties admitting good minimal models** (*submitted*). eprint: [arXiv:2005.01025](https://arxiv.org/abs/2005.01025)

2018 **On the Kodaira dimension of base spaces of families of manifolds**, *Journal of Pure Applied Algebra*, Vol. 225, Issue 11 (Nov 2021) eprint: [arXiv:1809.05616](https://arxiv.org/abs/1809.05616)

2018 **Harmomic metrics on Higgs sheaves and uniformization of varieties of general type** (with D. Greb, S. Kebekus and T. Peternell), *Mathematische Annalen*, 378, 1061-1094 (2020). eprint: [arXiv:1804.01266](https://arxiv.org/abs/1804.01266)

2018 **Brody hyperbolicity of base spaces of certain families of varieties** (with M. Popa and L. Wu), *Algebra Number Theory*, 12 (9): 2205-2242, 2019. eprint [arXiv:1801.05898](https://arxiv.org/abs/1801.05898)

2017 **Nonabelian Hodge theory for klt spaces and descent theorems of vector bundles** (with D. Greb, S. Kebekus and T. Peternell), *Compositio Math.* 155 (2): 289-323, 2019 eprint [arXiv:1711.08159](https://arxiv.org/abs/1711.08159)

2017 **Hyperbolicity of singular spaces** (with B. Cadorel and E. Rousseau), *Journal de l'École Polytechnique*, Volume 6 (2019): 1-18. eprint [arXiv:1710.08832](https://arxiv.org/abs/1710.08832)

2016 **Orbifold stability and Miyaoka-Yau inequality for minimal pairs** (with H. Guenancia), *Geometry & Topology* (to appear). eprint [arXiv:1611.05981](https://arxiv.org/abs/1611.05981)

2016 **Orbifold Chern class inequalities and applications** (with E. Rousseau), *submitted*. eprint [arXiv:1611.06420](https://arxiv.org/abs/1611.06420)

2015 **The Miyaoka-Yau inequality and uniformisation of canonical models** (with D. Greb, S. Kebekus and T. Peternell), *Annales scientifiques de l'École normale supérieure (ENS)*. (4) 52 (2019) no. 6, 1487-1535. eprint [arXiv:1511.08822](https://arxiv.org/abs/1511.08822)

- 2014 **A characterization of quotients of Abelian varieties** (with S. Lu). *International Mathematics Research Notices (IMRN)*, Vol. 2018 (1): 292-319 . eprint [arXiv:1410.0063](https://arxiv.org/abs/1410.0063)
- 2014* **The isotriviality of families of canonically-polarized manifolds over a special quasi-projective base.** *Compositio Math.*, 152 (7): 1421-1434 (2016). eprint [arXiv:1310.5391](https://arxiv.org/abs/1310.5391)
 * An exposition of this work was presented by Benoît Claudon in *Séminaire Bourbaki*, titled: Semi-positivité du cotangent logarithmique et conjecture de Shafarevich et Viehweg (d'après Campana, Paun, Taji..)
- 2013 **Birational positivity in dimension 4 – with an appendix by Frédéric Campana,** *Annales de l'institut Fourier*, 63(1): 203-216 (2013). eprint [arXiv:1304.6686](https://arxiv.org/abs/1304.6686)

OTHER PUBLICATIONS

- 2016 **Generic positivity and applications to hyperbolicity of moduli spaces** (with B. Claudon and S. Kebekus)
 Chapter in forthcoming book “*hyperbolicity in algebraic varieties*” (Editors: S. Diverio and C. Voisin). eprint [arXiv:1610.09832](https://arxiv.org/abs/1610.09832)
- 2016 **Uniformization of higher dimensional minimal varieties** (with D. Greb and S. Kebekus)
Proceedings of the 2015 AMS Summer Institute in Algebraic Geometry, Salt Lake City
 eprint [arXiv:1608.06644](https://arxiv.org/abs/1608.06644)

TEACHING EXPERIENCE

- 2021 **Coordinator,** *Calculus of one variable (Math1021)*, The University of Sydney
- 2020 **Lecturer and Coordinator,** *Mathematical Modeling (Math1013)*, The University of Sydney
- 2020 **Lecturer,** *Calculus of one variable (Math1021)*, The University of Sydney
- 2019 **Lecturer,** *Mathematical Modeling (Math1013)*, The University of Sydney
- 2019 **Lecturer,** *Calculus of one variable (Math1021)*, The University of Sydney
- 2018 **Lecturer,** *Differential Equations II*, undergraduate level, University of Notre Dame
- 2018 **Lecturer,** *Calculus B*, undergraduate level, University of Notre Dame
- 2017 **Lecturer,** *Differential Equations II*, undergraduate level, University of Notre Dame
- 2016 **Lecturer & unit developer,** *Complex Surfaces*, graduate level, Northwestern University
- 2016 **Lecturer,** *Calculus for Biology*, undergraduate level, University of Freiburg
- 2016 **Lecturer,** *Commutative Algebra*, undergraduate level, University of Freiburg
- 2015 **Lecturer,** *Elementary Algebraic Geometry*, undergraduate level, University of Freiburg
- 2015 **Lecturer,** *Algebra and Galois Theory*, undergraduate level, University of Freiburg
- 2015 **Lecturer,** *Calculus II for Engineers*, undergraduate level, University of Freiburg
- 2014 **Lecturer,** *Algebra and Galois Theory*, undergraduate level, University of Freiburg
- 2010-2013 **Tutor,** *Linear Algebra*, undergraduate level, McGill University
- 2009-2012 **Tutor,** *Calculus*, undergraduate level, McGill University

CONFERENCES AND SEMINARS

- 2020- Co-organizer, *Zoom Algebraic Geometry Seminar (ZAG)*
- 2019 Co-organizer, *Workshop in Birational Geometry and Moduli Spaces*, The University of Sydney
- 2019- Co-organizer, *Geometry and Topology weekly seminar*, The University of Sydney
- 2019 Co-organizer, *Hodge theory and Birational Geometry*, Centre International de Rencontres Mathématiques Scientifique (CIRM)

- 2014-2016 Co-organizer, *Oberseminar in Algebraic Geometry*, University of Freiburg
- 2014-2016 Co-organizer, *Joint seminar between Universities of Basel, Freiburg, Nancy and Strasbourg*
- 2014-2016 Co-organizer, *Outreach program for high school students*, University of Freiburg
- 2010 Organizer, *Seminar CIRGET junior*, McGill University, Montréal

SELECTED INVITED TALKS

- 2020 **Birational geometry of smooth families admitting good minimal models**, Zoom Algebraic Geometry Seminar (ZAG)
- 2020 **Birational geometry of smooth families admitting good minimal models**, Zoom Seminar, San Diego, USA
- 2019 **Base spaces of families with good minimal models**, 25th Kanazawa conference in Complex Geometry, Kanazawa, Japan
- 2019 **Base spaces of families with good minimal models**, UNSW Algebra seminar, Australia
- 2019 **Kebekus-Kovács Conjecture**, Workshop on algebraic geometry, Shanghai, China
- 2018 **Vanishing results in birational geometry**, Canadian Math. Soc. Meeting, Vancouver, Canada
- 2018 **Remarks on Kebekus-Kovács Conjecture**, University of Washington, Seattle, USA
- 2018 **Brody hyperbolicity of moduli stacks of varieties**, University of Washington, Seattle, USA
- 2017 **Orbifold stability and Miyaoka-Yau inequality for minimal models**, AGNES Algebraic Geometry Conference, Simons Center, Stony Brook University, USA
- 2017 **Chern class inequalities for minimal models and uniformization**, Analysis and Geometry Seminar, University of Sydney, Australia
- 2017 **Uniformization of complex singular spaces**, ANU Algebraic Geometry Seminar, The Australian National University, Australia
- 2017 **Uniformization of minimal varieties of general type**, Purdue Algebraic Geometry Seminar, Purdue University, USA
- 2016 **Chern class inequalities for minimal models of general type and uniformization of canonical models**, University of Illinois at Chicago, USA
- 2016 **Uniformization problems for minimal models**, Northwestern University, USA
- 2016 **Miyaoka-Yau inequalities for minimal models of general type and their uniformization**, CIMI conference in Complex Differential Geometry, Université de Toulouse, France
- 2016 **Miyaoka-Yau inequalities for minimal models and uniformization**, Complex p-adic and logarithmic Hodge theory and their applications, Simons Center, Stony Brook University, USA
- 2016 **A remark on Campana and Viehweg's conjectures**, Algebraic and Kähler Geometry Workshop, Université Grenoble Alpes, France
- 2015 **Miyaoka-Yau inequalities for minimal models of general type and their uniformization**, Imperial College London, UK
- 2015 **Chern class inequalities for minimal models of general type and uniformization**, Max Planck Institute, Germany

- 2015 **On a conjecture of Shafarevich and Campana**, 45th Summer Research Institute on Algebraic Geometry, American Mathematical Society – AMS meeting, Salt Lake City, USA
- 2014 **Semistable reflexive sheaves over klt spaces**, University of Strasbourg, France
- 2014 **On a characterization of quotients of Abelian varieties**, Université de Lorraine, France
- 2014 **A solution to the generalization of the Shafarevich conjecture**, Queen's University, Canada
- 2013 **The isotriviality of families of canonically polarized manifolds over a special base** (mini-course), Aix-Marseille University, France
- 2013 **A solution to the isotriviality conjecture of Campana**, University of Freiburg, Germany