

CV – RAJU KRISHNAMOORTHY

Contact Information

[Humboldt Universität Berlin](#)
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z.H. von Herrn Raju Krishnamoorthy
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Citizenship: United States

Employment

Wissenschaftlicher Mitarbeiter at HU Berlin	November 2022 - Present
Wissenschaftlicher Mitarbeiter at U. Wuppertal	December 2020 - October 2022
Limited Term Assistant Professor at UGA	August 2018 - August 2020
NSF Postdoctoral Fellow at FU Berlin	August 2016 - August 2018
Sponsor: Hélène Esnault	

Education

•Graduate Institution

Columbia University,	M.A. in Mathematics,	May 2011
Columbia University,	M.Phil. in Mathematics,	May 2014
Columbia University,	Ph.D. in Mathematics,	May 2016

•Undergraduate Institution

MIT,	B.S. in Mathematics with Computer Science,	January 2009
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Publications

1. Raju Krishnamoorthy, Mao Sheng, *Periodic Higgs Bundles over Curves*, arXiv 2011.03272, International Mathematics Research Notices rnae042, 2024.
DOI: 10.1093/imrn/rnae042
2. Raju Krishnamoorthy, Jinbang Yang, Kang Zuo. *Constructing abelian varieties from rank 2 Galois representations*, arXiv 2208.01999, Compositio Mathematica. 2024;160(4):709-731.
DOI:10.1112/S0010437X23007728
3. Raju Krishnamoorthy, Ambrus Pál. *Rank 2 Local Systems and Abelian Varieties II*, arXiv 2003:07831, Compositio Mathematica 158:4 (2022) 868-892.
DOI: 10.1112/S0010437X22007333
4. Raju Krishnamoorthy, Ambrus Pál, *Rank 2 Local Systems and Abelian Varieties*, arXiv 1089.02106, Selecta Mathematica 27:51 (2021).
DOI: 10.1007/s00029-021-00669-8

5. Raju Krishnamoorthy, *Rank 2 Local Systems, Barsotti-Tate Groups, and Shimura Curves*, arXiv 1711.04797, Algebra and Number Theory 16:2 (2022) 231-259.
DOI: 10.2140/ant.2022.16.231
6. Raju Krishnamoorthy, *Correspondences without a Core*, arXiv 1704.00335, Algebra and Number Theory 12:5 (2018) 1173-1214.
DOI: 10.2140/ant.2018.12.1173
7. Raju Krishnamoorthy, *Dynamics, Graph Theory, and Barsotti-Tate Groups: Variations on a Theme of Mochizuki*, PhD Thesis.
DOI: 10.7916/D88K792N
8. Ryan Daileida, Raju Krishnamoorthy, Anton Malyshev, *Maximal Class Numbers of CM Number Fields*. J. Number Theory 130:4 (2010) 936-943.
DOI: 10.1016/j.jnt.2009.09.013

Prepublications

1. Raju Krishnamoorthy Yeuk Hay Joshua Lam. *Constructing abelian varieties from rank 3 Galois representations with real trace field*, arXiv 2403.18138.
2. Raju Krishnamoorthy Yeuk Hay Joshua Lam. *Frobenius trace fields of cohomologically rigid local systems*, arXiv 2308.10642.
3. Philip Engel, Raju Krishnamoorthy, Daniel Litt. *The Manin-Mumford conjecture in genus 2 and rational curves on K3 surfaces*, arXiv 2208.08729.
4. Raju Krishnamoorthy, Mao Sheng, *Periodic de Rham Bundles over Curves*, arXiv 2011.03268.
5. Raju Krishnamoorthy, Jinbang Yang, Kang Zuo. *Finiteness of logarithmic crystalline representations II*, arXiv 2009.00074, submitted.
6. Raju Krishnamoorthy, Jinbang Yang, Kang Zuo. *Finiteness of logarithmic crystalline representations*, arXiv 2005.13472.
7. Raju Krishnamoorthy, Jinbang Yang, Kang Zuo. *Deformation theory of periodic Higgs-de Rham flows*, arXiv 2003.08906.
8. Raju Krishnamoorthy, Jinbang Yang, Kang Zuo. *A Lefschetz theorem for crystalline representations*, arXiv 2003.08906, submitted. **In revision at Forum of Mathematics Sigma.**

Awards

- NSF Postdoctoral Fellowship, 2016-2018
- President's Fellowship at Columbia University, 2010-2011
- Clay Academy Junior Fellow, 2005

Events organized

- Research seminar on arithmetic properties of rigid flat connections, SoSe23 (Humboldt Universität Berlin)
- Research seminar on the work of Landisman-Litt, WiSe22 (Humboldt Universität Berlin)
- Oberseminar on Applications of the étale fundamental group to algebraic geometry, SoSe21 (Bergische Universität Wuppertal).
- HIMR workshop on p -adic coefficients, June 2019 (Imperial College, London).

Invited Talks

- Rank 2 local systems and abelian varieties, Adam Mickiewicz University Poznań, January 2024.
- Rank 2 local systems and abelian varieties, UW Madison, NT seminar, October 2022.
- An introduction to étale fundamental groups, preparatory talk for Ringvorlesung for GRK 2240, July 2021.
- A Lefschetz theorem for crystalline representations, Hodge Theory, Period Mapping and Local System, Université de Montreal, December 2020.
- Rank 2 local systems and abelian varieties, ZOOMerFEST: Young Algebraic Geometers, July 2020.
- Rank 2 local systems and abelian varieties, Max Planck Institute Bonn, February 2020
- Rank 2 local systems and abelian varieties, Universität Mainz, July 2019
- Rank 2 local systems and abelian varieties, TU München, June 2019
- Rank 2 local systems and abelian varieties, UC Irvine NT seminar, February 2019
- Rank 2 local systems and abelian varieties, Caltech NT seminar, February 2019
- Rank 2 local systems and abelian varieties, Columbia AG seminar, January 2019
- Rank 2 local systems and abelian varieties, IAS seminar on geometric applications of the Langlands correspondence, January 2019
- Rank 2 local systems and abelian varieties, Northwestern NT seminar, January 2019
- Analogs of the Hasse Invariant, UGA number theory seminar, September 2018
- Analogs of the Hasse Invariant, Humboldt Universität, May 2018
- Rank 2 local systems and abelian varieties, Autour de cycles algébriques (Paris), May 2018

- A motivated introduction to the companions conjecture, USTC Hefei, March 2018
- Correspondences without a Core, USTC Hefei, March 2018
- Analogs of the Hasse Invariant, TU München, February 2018
- Analogs of the Hasse Invariant, Universität Mainz, December 2017
- Analogs of the Hasse Invariant, UPenn AG, October 2017
- Rank 2 Local Systems and Abelian Varieties, BIRS (Banff), October 2017
- Analogs of the Hasse Invariant, Cornell AG, September 2017
- Analogs of the Hasse Invariant, FU Berlin Gästseminar, June 2017
- Dynamics and Graph Theory, FU Berlin Gästseminar January 2017
- Maximal Class Numbers of CM Number Fields, STAGE at MIT, 2008

Teaching

- Tutor for Algebra at Bergische Universität Wuppertal, 2022 (**auf Deutsch**).
- Head tutor for Grundlagen der Mathematik, Linear Algebra I/II at Bergische Universität Wuppertal, 2020-2022. Ran Tutorium (**auf Deutsch**).
- Taught Calculus 1 at UGA, Fall 2018, Fall 2019
- Taught advanced undergraduate seminar on complex analysis and Riemann surfaces, Fall 2014
- Taught Calculus 1 at Columbia, Spring 2013, Spring 2016
- Shaunalynn Duffy and I started a creative math class for children with [sprout](#) in Somerville, MA. 2009-2010.