

Bharathwaj Palvannan

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Employment

- 2021- **Assistant Professor**, *Indian Institute of Science*, Bangalore, India.
- 2019-2021 **Postdoctoral Fellow**, *National Center for Theoretical Sciences*, Taipei, Taiwan.
- 2016-2019 **Hans Rademacher Instructor (postdoc)**, *University of Pennsylvania*, Philadelphia, USA.

Education

- 2010-2016 **PhD in Mathematics**, *University of Washington*, Seattle, USA.
Advisor: Ralph Greenberg
- 2006-2010 **B.Tech in Engineering Physics**, *Indian Institute of Technology Bombay*, India.

Papers and Preprints

- On computing the Newton polygons of plus and minus p -adic L -functions.**
with Sai Sanjeev Balakrishnan and Antonio Lei, (2023)
- An ergodic approach towards an equidistribution result of Ferrero–Washington.**
with Jungwon Lee, submitted (2022)
- Codimension two cycles in Iwasawa theory and tensor product of Hida families.**
with Antonio Lei, *Mathematische Annalen* (2022)
- Codimension two cycles in Iwasawa theory and elliptic curves with supersingular reduction.**
with Antonio Lei, *Forum of Mathematics, Sigma* (2019)
- On free resolutions of Iwasawa modules.**
with Alexandra Nichifor, *Documenta Mathematica* (2019)
- Height one specializations of Selmer groups.**
Annales de l’Institut Fourier (2019)
- On Selmer groups and factoring p -adic L -functions.**
International Mathematics Research Notices (2018)

Conference organization

- Nov 2022 **An in-house postdoc+student symposium**, *IISc*,
with Gautam Bharali and Purvi Gupta.
- Nov 2020 **L -values and Iwasawa theory**, *online*,
with Ashay Burungale, Ming-Lun Hsieh and Sujatha Ramdurai.

Student supervision

- Jan-Apr 2023 **Suryansh Shrivastava**, *Indian Institute of Science*,
Undergradutuate thesis on *Formalizing the proof of Stickelberger’s theorem on Lean*.
- Summer 2022 **Niranjan Kumar from Chennai Mathematical Institute**, *Indian Institute of Science*,
Reading project on Caroline Series’ paper *The modular surface and continued fractions*.
- March 2018 **Arizona Winter School on Iwasawa Theory**, *University of Arizona*,
Study group guide for John Coates’s study group on the *Weak Leopoldt conjecture*.
- Spring 2018 **Weichen Zhou**, *University of Pennsylvania*,
Masters thesis on *Elliptic curves over \mathbb{C} with complex multiplication*.
- Summer 2017 **Andrea Thevis**, *University of Pennsylvania*,
Masters thesis on *Elliptic curves and cryptography*.
- Fall 2017 **Yao-Rui Yeo**, *University of Pennsylvania*,
Ind. Study on *Galois representations*.

Short term visits

- May 2022 **University of Warwick**, *UK*,
visiting Jungwon Lee.
- Oct 2019 **Oberwolfach Leibniz Fellowship at MFO Oberwolfach**, *Germany*.
- Aug 2018 **Research in Pairs at MFO Oberwolfach**, *Germany*.
with Marc Masdeu and Chris Williams

June 2018	Universität Duisburg-Essen, visiting Andreas Nickel	Germany.
Mar 2018	Université Laval, visiting Antonio Lei	Canada.

Teaching at the Indian Institute of Science

Math 224: Complex Analysis,	Jan-Apr 2023.
Math 313: Algebraic Number Theory,	Aug-Dec 2022.

Teaching at the University of Pennsylvania

Math 104: Calculus I, <i>(Volumes of revolution, Integration techniques, Taylor series)</i>	Fall 2018, Fall 2016.
Math 240: Calculus III , <i>(Introduction to Linear algebra and ODEs)</i>	Fall 2018, Spring 2017.
Math 312: Linear Algebra,	Spring 2018.
Math 350: Undergraduate Number Theory,	Spring 2019.
Math 420: Ordinary differential equations,	Fall 2016.
(graduate) Math 620: Algebraic Number Theory,	Fall 2017.
(graduate) Math 621: Algebraic Number Theory (Good Teaching Award),	Spring 2018.

Teaching at the University of Washington

Math 307: Ordinary differential equations (Instructor),	Spring 2016.
Math 308: Matrix Algebra with applications (Instructor), <i>Summer 2015, Winter 2015, Spring 2014, Winter 2014.</i>	
Math 300: Introduction to mathematical reasoning (Instructor),	Summer 2013.
Teaching assistant for various undergraduate calculus courses.	

Invited Talks

Apr 2023	NCMW workshop on <i>Elliptic Curves</i>, four lectures on <i>p</i> -adic <i>L</i> -functions of elliptic curves.	IISER Thiruvanthapuram, India,
Mar 2023	Ottawa/Carleton Number Theory Seminar,	University of Ottawa (Canada).
Mar 2023	G20 Lecture Series,	Gujarat University, India.
Nov 2022	Random Geometry colloquium,	Tata Institute of Fundamental Research (Mumbai), India.
Aug 2022	Conference: <u>Elliptic curves and special values of <i>L</i>-functions</u>,	ICTS, India.
April 2022	Science Seminar,	Azim Premji University, India.
January 2022	Number Theory Seminar,	Indian Institute of Science, India.
Sept 2021	Philadelphia Area Number Theory Seminar,	Bryn Mawr, USA.
Dec 2020	Seminar on Geometry and Arithmetic,	UC Santa Barbara, USA.
August 2020	Algebra and Combinatorics Seminar,	Indian Institute of Science, India.
July 2020	Colloquium,	Tata Institute of Fundamental Research (Mumbai) India.
Feb 2020	Number Theory seminar,	Seoul National University, South Korea.
Jan 2020	Galois seminar,	University of Pennsylvania, USA.
Nov 2019	Taipei Postdoc seminar,	Academia Sinica / NCTS, Taiwan.
July 2019	Algebra and Number Theory seminar,	Universität des Saarlandes, Germany.
Apr 2019	Pizza seminar for graduate students,	University of Pennsylvania, USA.
Apr 2019	<u>AMS Sectional Meeting,</u> Special session on <u>Special values of <i>L</i>-functions and arithmetic invariants in families.</u>	University of Connecticut (Hartford), USA,
Mar 2019	Algebra-Number Theory seminar,	University of Maryland, USA.
Mar 2019	Columbia-CUNY-NYU Joint Number Theory Seminar,	Courant Institute, USA.
Oct 2018	Number theory seminar,	Université Laval, Canada.
June 2018	Oberseminar,	Universität Duisburg-Essen (Essen), Germany.
May 2018	The Bielefeld Arithmetic Geometry Seminar,	Universität Bielefeld, Germany.
May 2018	<u>Workshop: Iwasawa Theory and Related Topics,</u>	University of Heidelberg, Germany.
May 2018	Number theory seminar,	University of Illinois (Chicago), USA.
Nov 2017	Quebec Vermont Number theory seminar,	Concordia University, Canada.
Sept 2017	Number theory seminar,	Univeristy of British Columbia, Canada.

Sept 2017	Algebra seminar,	<i>University of Pennsylvania, USA.</i>
Mar 2017	Number theory seminar,	<i>Université Laval, Canada.</i>
Jan 2017	Philadelphia Area Number Theory Seminar,	<i>Bryn Mawr, USA.</i>
Jun 2016	<u>Workshop: New Directions in Iwasawa theory,</u> Video link: https://goo.gl/EksZ2s .	<i>Banff Research Center, Canada,</i>
Apr 2016	Galois seminar,	<i>University of Pennsylvania, USA.</i>
Jan 2016	Number theory seminar,	<i>University of California Los Angeles, USA.</i>
Nov 2015	Number theory seminar,	<i>University of Arizona, USA.</i>
Oct 2014	Number theory seminar,	<i>University of Washington USA.</i>
Sept 2014	Number theory seminar,	<i>IIT Bombay, India.</i>

Contributed Talks

Feb 2023	Symposium on Algebraic geometry and its applications,	<i>CIRM, France.</i>
Mar 2021	Spring Day 2021,	<i>NCTS, Taiwan.</i>
Sept 2020	CRM Members seminar,	<i>CRM, Canada.</i>
June 2020	Spring Day 2020,	<i>NCTS, Taiwan.</i>
Oct 2018	Maine/Québec Number theory conference,	<i>Université Laval, Canada.</i>
Oct 2016	Maine/Québec Number theory conference,	<i>Université Laval, Canada.</i>
Mar 2016	30th Automorphic forms workshop,	<i>Wake Forest University, USA.</i>
Oct 2015	Midwest Number theory conference,	<i>University of Illinois Chicago, USA.</i>
Sept 2015	Boston-Keio workshop,	<i>Boston University USA.</i>

Awards and Fellowships

2022	SERB Matrics grant,	<i>India.</i>
declined due to covid	Simons CRM Scholar,	<i>CRM, Canada.</i>
Oct 2019	Oberwolfach Leibniz Fellow,	<i>MFO Oberwolfach, Germany.</i>
Aug 2018	Research in Pairs, with Marc Masdeu and Chris Williams	<i>MFO Oberwolfach, Germany.</i>
Summer 2018	US Junior Oberwolfach Fellow,	<i>MFO Oberwolfach, Germany.</i>
Spring 2018	Good Teaching Award, Math 621 Algebraic Number Theory	<i>University of Pennsylvania.</i>
Spring 2013	Robert and Elaine Phelps fellowship,	<i>University of Washington.</i>
2003	International Math. Olympiad (IMO) Training camp,	<i>HBCSE, India.</i>