

# 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 Selmer groups and factoring  $p$ -adic  $L$ -functions.**  
*International Mathematics Research Notices* (2018), Issue 24, December 2018, Pages 7483-7554
- Height one specializations of Selmer groups.**  
*Annales de l'Institut Fourier*, Volume 69 (2019) no. 1, p. 303-334
- On free resolutions of Iwasawa modules**, (54 pages).  
with Alexandra Nichifor, *Doc. Math.* 24, 609-662 (2019)
- Codimension two cycles in Iwasawa theory and elliptic curves with supersingular reduction.**  
with Antonio Lei, *Forum of Mathematics, Sigma* (2019), 7, E25
- Codimension two cycles in Iwasawa theory and tensor product of Hida families.**  
with Antonio Lei, accepted for publication in *Mathematische Annalen* (2020)

## Conference organization

- Nov 2020  **$L$ -values and Iwasawa theory**, *online*.

## Graduate students supervised

- March 2018 **Arizona Winter School on Iwasawa Theory**, *University of Arizona Tucson, USA*,  
Study group guide for John Coates's study group on the Weak Leopoldt conjecture.
- Masters thesis **Weichen Zhou (Spring 2018)**, *Elliptic curves over  $\mathbb{C}$  with complex multiplication*.
- Masters thesis **Andrea Thevis (Summer 2017)**, *Elliptic curves and cryptography*.
- Ind. Study **Yao-Rui Yeo (Fall 2017)**, *Galois representations*.

## Short term visits

- Oct 2019 **Oberwolfach Leibniz Fellowship**, *MFO Oberwolfach, Germany*.
- Aug 2018 **Research in Pairs**, *MFO Oberwolfach, Germany*.  
with Marc Masdeu and Chris Williams
- June 2018 **Algebraic geometry and Arithmetic group**, *Universität Duisburg-Essen, Germany*,  
visiting Andreas Nickel.

## Teaching at the University of Pennsylvania

- Math 104: Calculus I**, *Fall 2018, Fall 2016*.  
(*Volumes of revolution, Integration techniques, Taylor series*)
- Math 240: Calculus III**, *Fall 2018, Spring 2017*.  
(*Introduction to Linear algebra and ODEs*)
- 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),**

*Summer 2015, Winter 2015, Spring 2014, Winter 2014.*

**Math 300: Introduction to mathematical reasoning (Instructor),**

*Summer 2013.*

**Teaching assistant for various undergraduate calculus courses.**

## Invited Talks

Sept 2021	<b>Philadelphia Area Number Theory Seminar,</b>	<i>Bryn Mawr, USA.</i>
Dec 2020	<b>Seminar on Geometry and Arithmetic,</b>	<i>UC Santa Barbara, USA.</i>
August 2020	<b>Number Theory seminar,</b>	<i>Indian Institute of Science, India.</i>
July 2020	<b>Colloquium,</b>	<i>Tata Institute of Fundamental Research (Mumbai) India.</i>
Feb 2020	<b>Number Theory seminar,</b>	<i>Seoul National University, South Korea.</i>
Jan 2020	<b>Galois seminar,</b>	<i>University of Pennsylvania, USA.</i>
Nov 2019	<b>Taipei Postdoc seminar,</b>	<i>Academia Sinica / NCTS, Taiwan.</i>
July 2019	<b>Algebra and Number Theory seminar,</b>	<i>Universität des Saarlandes, Germany.</i>
Apr 2019	<b>Pizza seminar for graduate students,</b>	<i>University of Pennsylvania, USA.</i>
Apr 2019	<b>AMS Sectional Meeting,</b>	<i>University of Connecticut (Hartford), USA,</i>
	<u>Special session on Special values of <math>L</math>-functions and arithmetic invariants in families.</u>	
Mar 2019	<b>Algebra-Number Theory seminar,</b>	<i>University of Maryland, USA.</i>
Mar 2019	<b>Columbia-CUNY-NYU Joint Number Theory Seminar,</b>	<i>Courant Institute, USA.</i>
Oct 2018	<b>Number theory seminar,</b>	<i>Université Laval, Canada.</i>
June 2018	<b>Oberseminar,</b>	<i>Universität Duisburg-Essen (Essen), Germany.</i>
May 2018	<b>The Bielefeld Arithmetic Geometry Seminar,</b>	<i>Universität Bielefeld, Germany.</i>
May 2018	<b><u>Workshop: Iwasawa Theory and Related Topics,</u></b>	<i>University of Heidelberg, Germany.</i>
May 2018	<b>Number theory seminar,</b>	<i>University of Illinois (Chicago), USA.</i>
Nov 2017	<b>Quebec Vermont Number theory seminar,</b>	<i>Concordia University, Canada.</i>
Sept 2017	<b>Number theory seminar,</b>	<i>University of British Columbia, Canada.</i>
Sept 2017	<b>Algebra seminar,</b>	<i>University of Pennsylvania, USA.</i>
Mar 2017	<b>Number theory seminar,</b>	<i>Université Laval, Canada.</i>
Jan 2017	<b>Philadelphia Area Number Theory Seminar,</b>	<i>Bryn Mawr, USA.</i>
Jun 2016	<b><u>Workshop: New Directions in Iwasawa theory,</u></b>	<i>Banff Research Center, Canada,</i>
	Video link: <a href="https://goo.gl/EksZ2s">https://goo.gl/EksZ2s</a> .	
Apr 2016	<b>Galois seminar,</b>	<i>University of Pennsylvania, USA.</i>
Jan 2016	<b>Number theory seminar,</b>	<i>University of California Los Angeles, USA.</i>
Nov 2015	<b>Number theory seminar,</b>	<i>University of Arizona, USA.</i>
Oct 2014	<b>Number theory seminar,</b>	<i>University of Washington USA.</i>
Sept 2014	<b>Number theory seminar,</b>	<i>IIT Bombay, India.</i>

## Contributed Talks

Mar 2021	<b>Spring Day 2021,</b>	<i>NCTS, Taiwan.</i>
Sept 2020	<b>CRM Members seminar,</b>	<i>CRM, Canada.</i>
June 2020	<b>Spring Day 2020,</b>	<i>NCTS, Taiwan.</i>
Oct 2018	<b>Maine/Québec Number theory conference,</b>	<i>Université Laval, Canada.</i>
Oct 2016	<b>Maine/Québec Number theory conference,</b>	<i>Université Laval, Canada.</i>
Mar 2016	<b>30th Automorphic forms workshop,</b>	<i>Wake Forest University, USA.</i>
Oct 2015	<b>Midwest Number theory conference,</b>	<i>University of Illinois Chicago, USA.</i>
Sept 2015	<b>Boston-Keio workshop,</b>	<i>Boston University USA.</i>