

Personal Information:

Department of Mathematics
Institute for Research in Fundamental Sciences (IPM)
Niavaran Square
Tehran, Iran

Phone: +98-21-2310 2206

E-Mail: hadi@ipm.ir

Research Interests: Arithmetic Algebraic Geometry, in particular:

- p -Divisible Groups and their Moduli Spaces, Cohomology of Rapoport-Zink Spaces and Shimura Varieties, Langlands Program, Galois Representations
 - Integral p -Adic Hodge Theory, Rigid and de Rham-Witt Cohomology Theories
 - A -Motives, Drinfeld Modular Varieties, z -Divisible Local Anderson Modules
 - Intersection Theory and K -Theory
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Post PhD positions:

- Starting January 2017: Associate Professor at **IPM**, Iran.
 - October 2016 - January 2017: Visiting Professor at **ETHZ**, Switzerland.
 - September 2014 - August 2016: Visiting Assistant Professor at **Purdue University**, USA.
 - Summer and Fall 2012: Visiting Scholar at **MIT**, USA.
 - September 2011 - August 2014: Postdoc and Harry Bateman Instructor at **Caltech**, USA.
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Educations:

- Fall 2010: Visiting Prof. Dr. Thomas Zink at the **University of Bielefeld**, Germany.
 - Spring 2010: Visiting Prof. Dr. Ching-Li Chai at the **University of Pennsylvania**, USA.
 - 2006 - 2011: Ph.D. in Mathematics at **ETHZ**, Switzerland, under the supervision of Prof. Dr. Richard Pink.
 - October 2005 - February 2006: Masters Thesis at **ETHZ**, Switzerland, under the supervision of Prof. Dr. Richard Pink.
 - 2002 - 2005: Diplome (B.S. and M.S.) in Mathematics at **EPFL**, Switzerland.
 - 2000 - 2002: 2 years of Mathematics at **Sharif University of Technology**, Iran.
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Preprints and Publications:

1. *Exterior Powers of π -Divisible Modules over Fields*: *J. Number Theory* 138 (2014), 119-174, 55 pages.
2. *Exterior Powers of Lubin-Tate Groups*: *J. Théor. Nombres Bordeaux* 27, 1 (2015), 77-148, 71 pages.

3. *Tensor Operations on z -Divisible Local Anderson Modules: J. Number Theory* 213 (2020), 116-151, 39 pages.
4. *A Cartesian Diagram of Rapoport-Zink Towers over Universal Covers of p -Divisible Groups: preprint (to appear in Communications in Number Theory and Physics)*, 31 pages.
5. *Comparison Isomorphisms between Cartier and Dieudonné Modules: preprint (submitted)*, 24 pages.
6. *On Certain Morphisms between Flag Varieties: preprint (submitted)*, 17 pages.
7. *Drinfeld Displays: preprint (submitted)*, 27 pages.
8. *Multilinear Theory of Commutative Group Schemes: preprint*, 51 pages.
9. *Intersection Theory of Proper Morphisms: preprint*, 50 pages.
10. *(G, μ) -Windows and Displays (joint with Oliver Bültel): preprint*, 57 pages.
11. *Resolutions in Model Categories: in preparation.*
12. *Exotic Homomorphisms between Inner Forms of $GL(n, \mathbb{Q}_p)$ and the First Steps towards a Local Proof of the Jacquet-Langlands Correspondence, in progress.*

Awards: In 2011, I was awarded the Swiss National Science Foundation research grant PBEZP - 137334 (the most prestigious Swiss grant for fresh PhD's).

Invited Talks:

- IPM, Tehran, Iran, December 13, 2018.
- Université Paris 13, Paris, France, May 14, 2018.
- IPM, Tehran, Iran, November 22, 2017.
- EPFL, Lausanne, Switzerland, May 11, 2017.
- IPM, Tehran, Iran, April 26, 2017.
- ETHZ, Zürich, Switzerland, November 25, 2016.
- University of Indiana at Bloomington, Bloomington, USA, April 18, 2016.
- Caltech, Pasadena, USA, October 29, 2015.
- AMS Sectional Meeting, Chicago, USA, October 3, 2015.
- University of Notre Dame, Notre Dame, USA, April 29, 2015.
- University of Chicago, Chicago, USA, March 3, 2015.
- Northwestern University, Evanston, USA, March 2, 2015.
- Purdue University, West Lafayette, USA, September 25, 2014.
- UCLA, Los Angeles, USA, November 14, 2013.
- UCI, Irvine, USA, October 22, 2013.
- UCSD, San Diego, USA, April 18, 2013.
- Caltech, Pasadena, USA, February 7, 2013.

- MIT, Cambridge, USA, October 30, 2012.
 - UCLA, Los Angeles, USA, March 5, 2012.
 - Caltech, Pasadena, USA, February 3, 2012.
 - Caltech, Pasadena, USA, December 8, 2011.
 - University of Pennsylvania, Philadelphia, USA, May 10, 2010.
 - Mini-course: IPM, Tehran, Iran, July 22 - August 12, 2009.
 - IPM, Tehran, Iran, July 13, 2006.
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Teaching Experience:

- September 2017-September 2019, at IPM: Topics in Arithmetic Geometry
 - Fall 2016: Visiting Professor at ETHZ:
 - Perfectoid Spaces
 - 2014-2016: Visiting Professor at Purdue University:
 - Differential Equations and Linear Algebra
 - 2011-2014: Instructor at California Institute of Technology:
 - Perfectoid Spaces
 - Arithmetic Theory of Abelian Varieties
 - Graduate Algebra
 - Local Class Field Theory
 - Algebraic Geometry
 - Graduate Number Theory
 - 2006-2011: Teaching Assistant at ETHZ:
 - Topology
 - Expander Graphs
 - Graph Theory
 - Algebra
 - Teaching Assistant at EPFL:
 - Linear Algebra
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Other Academic Activities:

- Advisor of three graduate students at IPM and a MSc student at Sharif University of Technology.
- Referee for various peer-reviewed journals (names of the journals are omitted due to privacy terms and conditions).
- 2011-2013: at California Institute of Technology:
 - Member of a PhD defense examination committee

- Member of three general examinations committees
 - Member of three candidacy examinations committees
 - Mentored two students for independent studies
 - Mentored student (Ayah Almousa) for MURF (Minority Undergraduate Research Fellowship)
 - Mentored student (Joshua Nevin) for SURF (Summer Undergraduate Research Fellowship)
 - 2009-2011: at ETHZ:
 - Co-advised Masters thesis of Simon Häberli
 - Co-advised Bachelor thesis of Meriton Ibraimi
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Language Skills:

- Persian: mother tongue.
 - English, French, German: fluent.
 - Arabic, Italian: medium.
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References:

- Pascal Boyer, *Université Paris 13* (boyer@math.univ-paris13.fr)
- Ching-Li Chai, *University of Pennsylvania* (chai@math.upenn.edu)
- Tong Liu, *Purdue University* (tongliu@math.purdue.edu)
- Elena Mantovan, *Caltech* (mantovan@caltech.edu)
- Richard Pink, *ETHZ* (pink@math.ethz.ch)
- Dinakar Ramakrishnan, *Caltech* (dinakar@caltech.edu)
- Freydoon Shahidi, *Purdue University* (fshahidi@purdue.edu)
- James E McClure, *Purdue University* (for teaching) (mcclurej@purdue.edu)