Personal Information:

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

Phone: +98-21-2310 2281
E-Mail: hadi@ipm.ir

Research Interests: Arithmetic Algebraic Geometry, in particular:

- **Perfectoid Geometry**, p-Divisible Groups and their Moduli Spaces, Cohomology of **Rapoport-Zink Spaces** and **Shimura Varieties**, **Langlands Program**, Galois Representations, **local Shimura Varieties** and mixed-characteristic G**-Shtukas**.
- **Algebraic** K**-Theory** and **Motivic Homotopy Theory**.

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.

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.

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*: Communications in Number Theory and Physics, 14, 4 (2020), 669-737, 38 pages.
5. *Explicit Isomorphism between Cartier and Dieudonné Modules*: Journal of Algebra 570 (2021), 611-635, 24 pages.
6. *(G, μ)-Windows and Deformations of (G, μ)-Displays* (joint with Oliver Bültel): (*submitted*), 60 pages.
7. *Deformations of Prismatic Higher (G, μ)-Displays over Quasi-Syntomic Rings (joint with Ali Partofard)*: (*submitted*), 63 pages.
8. *Embeddings of Certain Exceptional Shimura Varieties into Siegel Modular Varieties (joint with Ali Partofard)*: (*submitted*), 45 pages.
9. *On Certain Morphisms between Flag Varieties*: preprint, 17 pages.
10. *Drinfeld Displays*: preprint, 27 pages.
11. *Multilinear Theory of Commutative Group Schemes*: preprint, 51 pages.
12. *Intersection Theory of Proper Morphisms*: preprint, 50 pages.
13. *Resolutions in Model Categories*: in preparation.
14. *Cycles in the Cohomology of Rapoport-Zink Towers coming from the Lubin-Tate Tower (joint with Elena Mantovan)*: in preparation.
15. *G-Bundles on Fargues-Fontaine Curve in p-adic Hodge Theory (joint with Oliver Bültel)*: in progress
16. *Exotic Homomorphisms between Inner Forms of $\mathrm{GL}(n, \mathbb{Q}_p)$ and the First Steps towards a Local Proof of the Jacquet-Langlands Correspondence*: in progress.

Awards and Honors:

- 2021: the Young Mathematician of the Year, by the National Academy of Sciences (each year, awarded to one mathematician under 40, and is the most prestigious academic award in the country).
- 2021: the Young Professors Prize, by the Vice Presidency for Scientific and Technological Affairs.
- 2020: the Iranian National Science Foundation research grant for junior professors.
- 2011: the Swiss National Science Foundation research grant PBEZP - 137334 (the most prestigious Swiss grant for fresh PhD's).

Language Skills:

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