Abhinandan

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Research Interests

Arithmetic geometry: p-adic Hodge theory, p-adic cohomology theories

Employement

IMJ-PRG, Sorbonne Université, France Sep 2024 - Present
Postdoctoral fellow (Mentor: Wiesława Nizioł)

The University of Tokyo, Japan Jul 2022 - Jun 2024
JSPS postdoctoral fellow (Mentor: Takeshi Tsuji)

Université de Lille, France Jan 2022 - Jun 2022
Postdoctoral fellow (Mentor: Mladen Dimitrov)

Samsung R&D Institute Bangalore, India Jun 2014 - Aug 2016
Senior Software Engineer (Apr 2016 - Aug 2016)
Software Engineer (Jun 2014 - Mar 2016)

Education

Université de Bordeaux, France Sep 2018 - Nov 2021
Ph.D. in Mathematics (Advisors: Denis Benois & Nicola Mazzari)
Thesis: Finite height representations and syntomic complex

Université de Bordeaux, France Sep 2017 - Jul 2018
Second year of ALGANT masters (Advisor: Nicola Mazzari)
Thesis: p-adic Galois representations and elliptic curves
Grade: très bien

Universiteit Leiden, The Netherlands Sep 2016 - Aug 2017
First year of ALGANT masters

Indian Institute of Technology Guwahati, India Jul 2010 - Jun 2014
B.Tech. in Mathematics & Computing (Advisor: Anupam Saikia)
Thesis: Galois theory and inverse Galois problem

Papers and Preprints

7. Prismatic F-crystals and Wach modules (preprint, 2024)
6. Crystalline part of the Galois cohomology of crystalline representations (submitted, 2024)
5. Crystalline representations and Wach modules in the relative case II (submitted, 2024)
4. Crystalline representations and Wach modules in the imperfect residue field case (submitted, 2024)
3. Finite crystalline height representations and syntomic complexes (survey based on 1 & 2)
   RIMS Kôkyûroku No. 2269 (2023)
2. Syntomic complex and p-adic nearby cycles (submitted, 2023)
1. Crystalline representations and Wach modules in the relative case
   Annales de l'Institut Fourier (2024)

Achievements

JSPS KAKENHI research grant	2022 - 2024
MESRI France doctoral scholarship	2018 - 2021
ALGANT masters scholarship	2016 - 2018

Research Talks

Crystalline representations, Wach modules and prismatic F-crystals, Sapporo Hokkaido University number theory seminar	May 2024
Crystalline representations, Wach modules and prismatic F-crystals, Beijing BIMSA-YMSC number theory seminar (online)	Mar 2024
Crystalline representations, Wach modules and prismatic F-crystals, Copenhagen Number theory seminar (online)	Dec 2023
Prismatic F-crystals and Wach modules, Bordeaux Séminaire théorie des nombres	Sep 2023
Prismatic F-crystals and Wach modules, Bonn Young number theorists in Bonn 2023	Sep 2023
Prismatic F-crystals and Wach modules, Hiroshima 22^{nd} Hiroshima-Sendai conference on number theory	Jul 2023
Crystalline representations and Wach modules in the relative case Institute of Mathematical Sciences, Chennai	Mar 2023
Crystalline representations and Wach modules in the relative case, Indian Institute of Science, Bangalore	Feb 2023
Syntomic complex and finite height crystalline representations, RIMS Kyoto Algebraic number theory and related topics 2022	Dec 2022
Crystalline representations and Wach modules in the relative case, Kyoto University	Nov 2022
Syntomic complex with coefficients, The University of Tokyo	Oct 2022
Syntomic complex with coefficients, Séminaire géométrie arithmétique, Rennes	Mar 2022
Syntomic complex with coefficients, Séminaire arithmétique, Lille	Feb 2022
Crystalline representations and Wach modules in the relative case, Lille Séminaire arithmétique	Feb 2022
Crystalline representations and Wach modules in the relative case, Bordeaux Séminaire théorie des nombres	Nov 2021

Expository Talks

p-adic Simpson correspondence and p-adic Riemann-Hilbert correspondence D Seminar, The University of Tokyo	Jan 2023
On local newforms for $U(3)$, Groupe de travail "Formes automorphes", Lille	April 2022
Étale fundamental group, Séminaire Lambda, Bordeaux	Dec 2019

Conferences and Schools

Algebraic number theory and related topics, RIMS Kyoto	Dec 2023
Young number theorists in Bonn 2023	Sep 2023
22^{nd} Hiroshima-Sendai conference on number theory, Hiroshima	Jul 2023
Algebraic number theory and related topics, RIMS Kyoto	Dec 2022
p-adic cohomology and arithmetic geometry, Tohoku	Nov 2022
L-fuctions and motives in Niseko, Hokkaido	Sep 2022
Galois representations, automorphic forms and L-functions, CIRM Luminy	Jun 2022
Franco-Asian summer school in arithmetic geometry, CIRM Luminy	May 2022
Recent developments around p-adic modular forms (online), ICTS Bangalore	Dec 2020
Perfectoid spaces and p-adic automorphic forms, ICTS Bangalore	Sep 2019
Iwasawa 2019, Bordeaux	Jun 2019
Serre conjectures and p-adic Langlands program, Padova	Jun 2019
Masterclass on stacks, Angers	Dec 2017
Summer school on modular forms, Padova	Aug 2017

Computer skills

Languages: C, C++, Python

Softwares: LaTeX, Sage, MATLAB