Dr. Abhiram M. Kidambi

Research interests

Interface of number theory, arithmetic geometry, and physics
Mathematical physics: Partitions, BPS attractors, characterization of RCFTs, Feynman integrals, $K3$ and Calabi-Yau sigma models, wall crossing, moonshine.
Mathematics: Automorphic forms and L-functions, arithmetic of algebraic varieties and Calabi-Yau manifolds, murmurations, computational aspects of the Langlands program

Appointments

- Scientist - Max Planck Institute for Mathematics in the Science, Leipzig, Germany (current)
- Postdoc - Kavli IPMU, University of Tokyo (2020-2023)
- Research assistant - TU Vienna (2016-2020)

University Education

- PhD in Mathematical Physics (TU Wien, 2020)
  Dissertation: Automorphic forms in string theory
- MSc in Mathematics/Mathematical Physics (LMU Munich and TU Munich)
- MSc in Physics - Quantum Information (U.Nottingham)
- Studies of Electronics and Instrumentation Engineering (BIT Bangalore, India)

Teaching

(1) Computational Number Theory, MPI-MiS + U.Leipzig (WiSe 2024)
(2) Arithmetic geometry of Feynman integrals, MPI-MiS + U.Leipzig (WiSe 2024)
(3) Automorphic forms and L-functions, Uni. Wien (SoSe 2024)
(4) Lecture series on black holes, Leibniz Universität Hannover (SoSe 2022)
(5) Seminar series on 'Advanced Supersymmetric gauge theories' (SoSe 18)
(6) Seminar series on 'Supersymmetric gauge theories' (WiSe 2017-18)
(7) Number theory and black holes (38 Hours, internal lectures), TU Vienna (SoSe 2017)

Workshop and conference organization

(1) Murmurations in arithmetic geometry (SCGP), Nov 2024
(2) Workshop on Number Theory and Physics (ICTP Trieste) (Jun 2024)
(3) School on Number Theory and Physics (ICTP Trieste) (Jun 2024)
(4) Geometry and Automorphy of Supersymmetric Partitions (Kavli IPMU), Feb 2023
(5) Workshop on Number theory, strings, and quantum physics (Kavli IPMU), Jun 2021

Programming and Computing

Strong: C/C++, Python, Haskell. Software: Mathematica, SageMath, Pari/GP and GAP. Reasonable: OCaml, Ruby, Rust, Lean. Strong functional programming skills and logical programming with λ-calculi. Good and increasing familiarity with Type theoretic approaches to computing. Excellent knowledge of shell scripting in Unix systems, and Linux/Unix systems, database and server management.

References

Available upon request

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