Sanchit Chaturvedi

CONTACT INFORMATION

Courant institute
NYU
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CURRENT POSITION

Simons junior fellow at NYU Courant.

RESEARCH INTERESTS

Nonlinear Partial Differential Equations, Kinetic Theory, Plasma Physics, Fluid dynamics, General relativity.

EDUCATION

Stanford University, Stanford, CA USA.

Ph.D, Mathematics, (2018-2023)
Advisor: Jonathan Luk

New York University, New York, NY USA

B.A., Mathematics, (2014-2018).

St. Peter's College, Agra, U.P India

High School, (2010-2014).

HONORS AND AWARDS

Kovalevskaya Grant awardee

Early-career AMS-NSF-Simons-ICM Travel Grant awardee

Hollis Cooley Prize "for excellence and promise in undergraduate mathematics" (2017)

Daniel Getman and Leonard Marker Memorial Research Scholar, 2017.

Funding for Summer undergraduate research experience (SURE) from the Courant Institute

Research+ and Dean Undergraduate Research Fellowship (DURF) from NYU (2016, 2017).

Clelia Abele Scholarship (2017-2018)

Secured position 2205 in IIT-JEE (Joint Entrance examination Advance) for Indian institute of technology amongst 1.5 million students enrolled for the exam

TEACHING EXPERIENCE

Math tutor at Courant Institute for Calculus, Linear Algebra, Real Analysis (2016, 2017),
Course Assistant for Math 19(Single variable Calculus)- Fall 2018, Stanford University,
Course Assistant for Math 137(Methods of Math Physics)- Spring 2019, Stanford University,
Course Assistant for Math 175(Functional Analysis)- Winter 2020, Stanford University,
Teaching Assistant for MATH-53 (ODEs and linear algebra)- Spring 2020, Stanford University,
Teaching Assistant for MATH-21 (single variable calculus III)- Fall 2020, Stanford University,
Course Assistant for MATH-173 (undergrad theory of PDE)- Winter 2021, Stanford University,
Course Assistant for MATH 131P (undergrad intro to PDE)- Winter 2022, Stanford University,
Teaching Assistant for MATH-63CM (first year honors sequence)- Spring 2022, Stanford University.

RESEARCH PAPERS

1. S. Chaturvedi. Local existence for the Landau Equation with hard potentials, To appear in Siam journal on math analysis.

2. S. Chaturvedi. Stability of vacuum for the Landau equation with hard potentials, Probability and Mathematical Physics, DOI: 10.2140/pmp.2022.3.791, 2022.

3. Stability of vacuum for the Boltzmann Equation with moderately soft potentials, Annals of PDE, 7:15, 2021.

4. The Vlasov-Poisson-Landau system in the weakly collisional regime, with Jonathan Luk and Toan Nguyen, To appear in Journal of American Math Society, 2022.

5. Phase mixing for solutions to 1D transport equation in a confining potential, with Jonathan Luk, Kinetic and related models, doi:10.3934/krm.2022002, 2022.

6. The inviscid limit of viscous Burgers at nondegenerate shock formation, with Cole Graham, To appear in Annals of PDE, 2022.

Invited Talks

August 2018, Probability Seminar, ICTS Bangalore.
November 2020, Analysis Seminar, UPenn.
Feburary 2021, Kinetic Coffee, Cambridge University.
April 2021, Graduate analysis seminar, UC Davis.
May 2021, Analysis seminar, NYU Courant.
June 2021, Analysis seminar, University of Kentucy.
July 2021, GR and hyperbolic PDE seminar.
October 2021, Analysis seminar, University of California, Berkeley.
Feburary 2022, PDE seminar, Penn State.
March 2022, Analysis seminar, Princeton University.
July 2022, invited junior short talk, Probability and Mathematical conference, Helsinki (satellite of ICM).
July 2022, Analysis seminar, Chinese Academy of Sciences.

Computing Skills

- Matlab.
- Languages: C, C++, Java, Python, MPI parallel processing library.
- Fast solvers for differential equations

Languages

Hindi, English

Other Interests

Squash-Member of the squash 4.5 men's team at NYU

Gymnastics, Calisthenics.

References

Jonathan Luk, Stanford University, jluk@stanford.edu.

Scott Armstrong, New York University, scotta@cims.nyu.edu.

Jacob Bedrossian, University of Marlyland, jacob@math.umd.edu.

Clement Mouhot, Cambridge University, c.mouhot@dpmms.cam.ac.uk.

Toan Nguyen, Penn State, nguyen@math.psu.edu.