Dr. Anupam Sen

Curriculum Vitae

Present Position and Address

Dr. Anupam Sen
Post Doctoral Fellow
TIFR Centre for Applicable Mathematics
Sharada Nagar, Chikkabommsandra,
Bengaluru, Karnataka-560065, India
Email: sen.anupam123@gmail.com, anupam21@tifrbng.res.in
Mobile: +91-8617890883, +91-7718763654

Work Experience

Post Doctoral Fellow
TIFR Centre for Applicable Mathematics, Bengaluru, Karnataka-560065, India
September 2021- Present

Complete Academic Qualifications

2021 **Doctor of Philosophy (Mathematics)**.
Institution: Indian Institute of Technology Kharagpur, Kharagpur, India
Title of the Thesis: **"Analytical study of delta shock waves in certain one-dimensional quasilinear hyperbolic system of conservation laws"**
Thesis supervisor : Prof. T. Raja Sekhar
Date of thesis Defense : 20th August, 2021

2014 **Master of Science (Mathematics)**.
Institution: Indian Institute of Technology Bombay, Mumbai, India
Marks Obtained : 7.29 (CGPA, Out of 10) (First class)

2012 **Bachelor of Science (Mathematics (Hons), Physics and Chemistry (Minor))**.
Institution: Midnapore College, Vidyasagar University, India
Marks Obtained : 72.625% (Hons)(First class),
Minor in Physics (60% marks) and Chemistry (75% marks)

2009 **Higher Secondary Education** (12^{th}).
Institution: Kharagpur Silver Jubilee High School, West Bengal Council of Higher Secondary Education

Marks Obtained : 84.2% (First division)

2007 **Secondary Education** (10^{th}).
Institution: Mawa I. C. High School, West Bengal Board of Secondary Education
Marks Obtained : 86.88% (First division)

Research Interests

Hyperbolic Conservation Laws
Partial Differential Equations
Nonlinear Waves

List of Publications (in peer reviewed journals)

2023 ♣ B. Chhatria, **Anupam Sen** and T. Raja Sekhar, Self-similar viscosity approach to the Riemann problem for a strictly hyperbolic system of conservation laws, **Mathematical Methods in the Applied Sciences** 46 (6) (2023): 7265-7284 **(Wiley) (SCI)** (DOI: https://doi.org/10.1002/mma.8969)

.

2021 ♣ **Anupam Sen** and T. Raja Sekhar, The limiting behavior of the Riemann solution to the isentropic Euler system for logarithmic equation of state with a source term, **Mathematical Methods in the Applied Sciences** 44 (8) (2021): 7207-7227 **(Wiley) (SCI)** (DOI: https://doi.org/10.1002/mma.7254)

2021 ♣ **Anupam Sen** and T. Raja Sekhar, The multiplication of distributions in the study of delta shock waves for zero-pressure gasdynamics system with energy conservation laws, **Ricerche di Matematica (Springer)**, 2021 **(SCI)** (Article in press) (DOI: https://doi.org/10.1007/s11587-021-00565-5)

2020 ♣ **Anupam Sen** and T. Raja Sekhar, Delta shock wave and wave interactions in a thin film of a perfectly soluble anti-surfactant solution, **Communications on Pure and Applied Analysis** 19 (5) (2020): 2641-2653 **(American Institute of Mathematical Sciences) (SCI)** (DOI: 10.3934/cpaa.2020115)

2019 ♣ **Anupam Sen** and T. Raja Sekhar, Delta shock wave as self-similar viscosity limit for a strictly hyperbolic system of conservation laws, **Journal of Mathematical Physics** 60 (5) (2019): 051510 **(American Institute of Physics) (SCI)** (DOI: https://doi.org/10.1063/1.5092668)

2019 ♣ **Anupam Sen** and T. Raja Sekhar, Structural stability of the Riemann solution for a strictly hyperbolic system of conservation laws with flux approximation, **Communications on Pure and Applied Analysis** 18 (2) (2019): 931-942 **(American Institute of Mathematical Sciences) (SCI)** (DOI: 10.3934/cpaa.2019045)

2019 ♣ **Anupam Sen**, T. Raja Sekhar and D. Zeidan, Stability of the Riemann solution for a 2×2 strictly hyperbolic system of conservation laws, **Sadhana** 44 (11) (2019), Article number: 228 **(Springer) (SCI)** (DOI: https://doi.org/10.1007/s12046-019-1212-z)

2017 ♣ **Anupam Sen**, T. Raja Sekhar and V. D. Sharma, Wave interactions and stability of the Riemann solution for a strictly hyperbolic system of conservation laws, **Quarterly of Applied Mathematics** 75 (3) (2017): 539-554 **(American Mathematical Society) (SCI)** (DOI: https://doi.org/10.1090/qam/1466)

List of Communicated Papers

2023 ♣ S. S. Ghoshal, A. Parmar and **Anupam Sen**, Large data existence for isentropic Euler equations with power law **(preprint)**.

Award & Honours

♣ Institute Post Doctoral Fellowship at TIFR Centre for Applicable Mathematics, September 2021.

♣ **SRF** (Senior Research Fellow) of CSIR-UGC, India

♣ **JRF** (Junior Research Fellow) of CSIR-UGC, India

♣ Awarded **JRF** project (SERB, DST, Government of India (Ref No: SB/FTP/MS-047/2013)) entitled "Delta shock waves and wave inactions in hyperbolic system of conservation laws" at IIT Kharagpur (October 2015-December 2016)

♣ Qualified **Joint CSIR-UGC NET (December 2015)** with UGC research fellowship, **Rank-49**

♣ Qualified **Graduate Aptitude Test in Engineering (GATE) 2015**, **AIR-192**

♣ Qualified **Joint CSIR-UGC NET (June 2014)** with lecturership, **Rank-29**

♣ Received **'Merit cum Means'** scholarship (July 2012-May 2014) during M.Sc. from IIT Bombay.

♣ Qualified **Joint Admission Test for M.Sc. (JAM) 2012**, **AIR-26**

Conferences Participated in Abroad/ India

2019 ♣ Participated and given a poster presentation on "Wave interactions and stability of the Riemann solution for a strictly hyperbolic system of conservation laws" in **ICIAM-2019** at **Valencia, Spain**, July 15-19, 2019

2018 ♣ Participated and given a poster presentation on "Wave interactions in a thin film of a perfectly soluble anti-surfactant solution" in **ICM-2018** at **Rio de Janeiro, Brazil**, August 1-9, 2018

2018 ♣ Participated and given a conference talk on "Stability of the Riemann solution for a strictly hyperbolic system of conservation laws with flux approximation" in **ISTAM-2018** at Dayanand Sagar University, Bangalore, India, December 20-23, 2018

Workshops Participation

2017 ♣ Workshop on **AIS Linear Partial Differential Equations** at TIFR-CAM, June 19- July 8, 2017

2018 ♣ Workshop on **AIS Differential Equations** at University of Hyderabad, June 4-23, 2018

2019 ♣ Workshop on **AIS System of Conservation Laws: Theory and Numerics** at TIFR-CAM, August 5-17, 2019

Teaching Experience

Teaching Assistant at Indian Institute of Technology Kharagpur for the courses

♣ Mathematics I (MA 10001 : Calculus and Differential Equations), Autumn 2018-2019, 2019-2020.

♣ Mathematics II (MA 10002: Linear Algebra and Numerical Analysis), Spring 2017-2018, 2018-2019, 2019-2020.

♣ PDE (MA 20103), Autumn 2020-2021.

♣ Analytical Mechanics (MA51005), Autumn 2020-2021.

♣ Integral Equations and Variational Methods (MA51004/ MA40002/ MA61052), Spring 2020-2021.

♣ Teaching assistant, NPTEL course on "Laplace Transform" hosted on Swayam Portal. Instructor Prof. Indrava Roy, July- October 2021.

♣ Teaching assistant, NPTEL course on "An Invitation to Topology" hosted on Swayam Portal. Instructor Prof. Indrava Roy, January- April 2022.

Professional Membership

♣ Life Membership for Indian Mathematical Society (L/2019/155)

Computer Skills

Operating Systems: Windows

Programming Languages: C

Mathematical Software: MATLAB, Mathematica

For Documentation: TeXstudio, Texmaker, WinEdt, Microsoft Office (Word, Power Point, Excel)

Personal Details

Father's Name : Ashok Kumar Sen

Date of Birth: 21^{th} November, 1991

Sex : Male

Citizenship : Indian

Place of Birth : Chakmakrampur, Kharagpur, West Bengal, India

Permanent Address

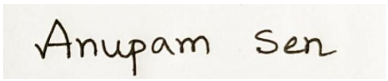
Vill+P.O.- Chakmakrampur
P.S.- Kharagpur (Local), Dist.- Paschim Medinipur, Pin code- 721149
West Bengal, India

Name of the Referees

- **Prof. T. Raja Sekhar**
  Associate Professor
  Department of Mathematics,
  Indian Institute of Technology Kharagpur
  Kharagpur-721302, West Bengal, India
  Email: trajasekhar@maths.iitkgp.ac.in
  Phone:+91-3222-282602
- **Prof. Shyam Sundar Ghoshal**
  Associate Professor
  Centre for Applicable Mathematics (CAM),
  Tata Institute of Fundamental Research (TIFR),
  Sharada Nagar, Chikkabommsandra,
  Bangalore 560065, Karnataka, India
  Email: ghoshal@tifrbng.res.in
  Phone: +91 80 6695-3745

Declaration

I hereby declare that all the above information is correct to the best of my knowledge and belief.

Signature 

Place : Bengaluru

Date : March 21, 2023