DR. MANIL T. MOHAN
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ACADEMIC POSITIONS

October 10, 2023–till date	Associate Professor, Department of Mathematics, Indian Institute of Technology Roorkee-IIT Roorkee, India.
July 23, 2018–October 9, 2023	Assistant Professor, Department of Mathematics, Indian Institute of Technology Roorkee-IIT Roorkee, India.
May 1, 2018–July 22, 2018	Department of Science and Technology (DST), Innovation in Science Pursuit for Inspired Research (INSPIRE) Faculty, Department of Mathematics, Indian Institute of Technology Roorkee-IIT Roorkee, India.
June 1, 2009–July 31, 2009	Faculty Improvement Program (FIP) Substitute Lecturer in Mathematics, Department of Mathematics, University College, Thiruvananthapuram, Kerala, India.
Oct 28, 2008–Jan 14, 2009	Guest Lecturer in Mathematics, Department of Mathematics, Mahatma Gandhi College (MG College), Thiruvananthapuram, Kerala, India.

RESEARCH EXPERIENCE

August 1, 2017–January 31, 2018	Visiting Scientist, Statistics and Mathematics Unit, Indian Statistical Institute (ISI), Bangalore, India.
June 2, 2015–June 1, 2017	National Academy of Sciences (NAS), National Research Council (NRC) Postdoctoral Fellow (PDF), Department of Mathematics and Statistics, Air Force Institute of Technology (AFIT), USA.
January 1, 2015–May 31, 2015	National Board of Higher Mathematics (NBHM) PDF, School of Mathematics, Indian Institute of Science Education and Research, Thiruvananthapuram (IISER-TVM), Kerala, India.
August 1, 2011–July 31, 2014	Council of Industrial and Scientific Research (CSIR) Senior Research Fellow (SRF), School of Mathematics, IISER-TVM, Thiruvananthapuram, Kerala, India.
August 1, 2009–July 31, 2011	CSIR Junior Research Fellow (JRF), School of Mathematics, IISER-TVM, Thiruvananthapuram, Kerala, India.

SCHOLASTIC RECORDS

- August 1, 2009–August 7, 2014: Doctor of Philosophy (PhD) in Mathematics.
  Indian Institute of Science Education and Research, Thiruvananthapuram (IISER-TVM), Kerala, India.
  - Course Work CGPA: 10/10.
  - Thesis Title: *"Stochastic Analysis of General Hydrodynamic Models".*
  - Thesis Supervisor: Dr. Utpal Manna, School of Mathematics, IISER-TVM.
  - Date of Defense: August 7, 2014.
- 2006 – 2008: Master of Science (MSc) in Mathematics.
  Mar Ivanios College, Thiruvananthapuram (Kerala University), Kerala, India.
  - Percentage of Marks: 90.44% (Distinction).
  - Fourth Position - Kerala University.
  - Dissertation Title: *"A Study on Semigroups".* Supervisor: Dr. James Alexander, Department of Mathematics, Mar Ivanios College, Thiruvananthapuram.
- 2003 – 2006: Bachelor of Science (BSc) in Mathematics (main), Statistics and Physics (subsidiary).
  Mar Ivanios College, Thiruvananthapuram (Kerala University), Kerala, India.
  - Percentage of Marks: 99.70% (Distinction).
  - First Rank - Kerala University, Sir T. Madhava Rao Gold Medal for the year 2006.
- 2001 – 2003: Higher Secondary Education (HSE), Science(Mathematics, Physics, Chemistry, Biology).
  Govt. Higher Secondary School, Venjaramood (Kerala Board), Trivandrum, Kerala, India.
  - Percentage of Marks: 91.50% (Distinction).
  - School Topper.
- 2000 – 2001: Secondary School Leaving Certificate (SSLC).
  Govt. Higher Secondary School, Venjaramood (Kerala Board), Trivandrum, Kerala, India.
  - Percentage of Marks: 89.00% (Distinction).
  - School Third.

RESEARCH INTERESTS

- Stochastic Analysis–Large and moderate deviation theory, Invariant measures, Ergodicity, etc.
- Stochastic (Partial) Differential Equations–Local and global solvability, Support theorems, Stochastic stability, random dynamics of SPDEs , etc.
- Partial Differential Equations–Solvability, stability, dynamics and asymptotic behavior of parabolic and hyperbolic systems.
- Control Theory–Deterministic and stochastic control theory in finite and infinite dimensions, Optimal control theory, etc.
- Mathematical Fluid Dynamics–Solvability of compressible and incompressible fluid flow equations, asymptotic analysis, stochastic analysis and controllability of fluid flows, etc.
- Inverse Problems.
- Optimization problems with orthogonal matrix constraints.

COURSES TAUGHT (IIT Roorkee)

Semester	Course Code	Course Name	Faculty Score
Spring 2023–24	MAI-102	Mathematics II (BTech)	(Ongoing)
Autumn 2024–25	MA-411/MAC-503	Theory of Ordinary Differential Equations (BS-MS/MSc)	4.93/4.90
	MA-533	Measure Theory	4.84
Spring 2023–24	MAI-102	Mathematics II (BTech)	4.63
Autumn 2023–24	MA-516	Advanced Partial Differential Equations (MSc)	4.97
Spring 2022–23	MAN-006	Probability and Statistics (BTech)	4.63
Autumn 2022–23	MAN-605/611	Functional Analysis (Integrated MSc/MSc)	3.92/4.70
Spring 2021–22	MAN-533	Integral Equations and Calculus of Variations (MSc)	4.92
	MAN-006	Probability and Statistics (BTech, Course coordinator)	4.52
Autumn 2021–22	MAN-501/511	Theory of Ordinary Differential Equations (Integrated MSc/MSc)	3.59/4.89
	MAN-913	Sobolev Spaces and Applications (Pre-PhD)	4.73
Spring 2020–21	MAN-533	Integral Equations and Calculus of Variations (MSc)	4.79
	MAN-006	Probability and Statistics (BTech)	4.79
Autumn 2020–21	MAN-501/511	Theory of Ordinary Differential Equations (Integrated MSc/MSc)	3.41/4.51
Spring 2019–20	MAN-533	Integral Equations and Calculus of Variations (MSc)	4.51
	MAN-006	Probability and Statistics (BTech)	4.37
Autumn 2019–20	MAN-914	Stochastic Partial Differential Equations (Pre-PhD)	4.93
	MAN-501/511	Theory of Ordinary Differential Equations (Integrated MSc/MSc)	4.52/4.52
	MAN-001	Mathematics-I (BTech)	4.23
Spring 2018–19	MAN-913	Sobolev Spaces and Applications (Pre-PhD)	4.90
	MAN-533	Integral Equations and Calculus of Variations (MSc)	4.92
	MAN-006	Probability and Statistics (BTech)	4.46

COURSES TAUGHT (IIT Roorkee)

Semester	Course Code	Course Name	Faculty Score
Autumn 2018–19	MAN-205	Ordinary and Partial Differential Equations (Integrated MSc)	4.71
	MAN-001	Mathematics-I (BTech)	3.67

PUBLICATIONS

Accepted/Appeared

2024

103. S. Gautam and **M. T. Mohan**, On the convective Brinkman-Forchheimer equations, *Dynamics of Partial Differential Equations*, 2024.
102. S. Gautam, K. Kinra and **M. T. Mohan**, Feedback stabilization of Convective Brinkman-Forchheimer Extended Darcy equations, Accepted in *Applied Mathematics and Optimization*, 2024.
101. S. Mahajan, A. Khan and **M. T. Mohan**, "Finite element approximation for a delayed generalized Burgers-Huxley equation with weakly singular kernels: Part I Well-posedness, Regularity and Conforming approximation", *Computers & Mathematics with Applications*, **174**, 261–286, 2024.
100. K. Kinra and **M. T. Mohan**, "Asymptotic analysis of the 2D and 3D convective Brinkman-Forchheimer equations in unbounded domains", *Reviews in Mathematical Physics*, 2024.
99. **M. T. Mohan**, "Approximations of 2D and 3D stochastic convective Brinkman-Forchheimer extended Darcy equations", *Acta Applicandae Mathematicae*, **193**, Ar. No. 3, 2024.
98. K. Kinra and **M. T. Mohan**, "Asymptotic analysis of two-dimensionalOldroyd fluids in unbounded domains: Global attractors and their dimension", *Asymptotic Analysis*, 2024.
97. K. Kinra and **M. T. Mohan**, "Theory of weak asymptotic autonomy of pullback stochastic weak attractors and its applications to 2D stochastic Euler equations driven by multiplicative noise", *SIAM Journal on Mathematical Analysis*, **56**(5), 6268–6301, 2024.
96. S. Sankar, **M. T. Mohan** and S. Karthikeyan, "Existence of global and explosive mild solutions of fractional reaction-diffusion system of semilinear SPDEs with fractional noise", *Stochastics and Dynamics*, **24**(3), 2450022 (40 pages), 2024.
95. A. Kumar and **M. T. Mohan**, "Uniform large deviation principle for the solutions of two-dimensional stochastic Navier-Stokes equations in vorticity form", *Applied Mathematics and Optimization*, **90**, Ar. No. 9, 2024.
94. A. Kumar and **M. T. Mohan**, "Large deviation principle for a class of stochastic partial differential equations with fully local monotone coefficients perturbed by Lévy noise", *Potential Analysis*, 2024.

93. **M. T. Mohan**, K. Sakthivel and S. Sritharan, "Dynamic programming of the stochastic Navier-Stokes equations forced by Lévy noise", *Mathematical Control and Related Fields*, 2024.
92. A. Kumar, K. Kinra and **M. T. Mohan**, "Wong-Zakai approximation for a class of SPDEs with fully local monotone coefficients and its application, *Journal of Mathematical Fluid Mechanics*, **26**, Ar. No. 44, 2024.
91. P. Kumar and **M. T. Mohan**, "An inverse source problem for convective Brinkman-Forchheimer equations with the final overdetermination", *Inverse Problems and Imaging*, **18**(5), 1171–1222, 2024.
90. S. Gautam, K. Kinra and **M. T. Mohan**, "2D and 3D convective Brinkman-Forchheimer equations perturbed by a subdifferential and applications to control problems", *Mathematical Control and Related Fields*, **14**(3), 1048–1085, 2024.
89. A. Kumar and **M. T. Mohan**, "Well-posedness of a class of stochastic partial differential equations with fully monotone coefficients perturbed by Lévy noise, *Analysis and Mathematical Physics*, **14**(3), Paper No. 44, 2024.
88. **M. T. Mohan**, K. Sakthivel and S. S. Sritharan, "Dynamic programming of the stochastic Burgers equation driven by Lévy noise", *Journal of Optimization Theory and Applications*, **201**, 490–538, 2024.
87. K. Kinra and **M. T. Mohan**, "Long term behavior of 2D and 3D non-autonomous random convective Brinkman-Forchheimer equations driven by colored noise", *Journal of Dynamics and Differential Equations*, 2024.
86. K. Kinra, **M. T. Mohan** and R. Wang, "Asymptotically autonomous robustness of non-autonomous random attractors for stochastic convective Brinkman-Forchheimer equations on $\mathbb{R}^3$", *International Mathematics Research Notices, IMRN*, **2024** (7), 5850–5893, 2024.
85. S. Sankar, **M. T. Mohan** and S. Karthikeyan, "Lower and upper bounds for the explosion times of a system of semilinear SPDEs," *Stochastics*, **96**(1), 846–886, 2024.
84. E. M. Manuel, V. Pankajakshan and **M. T. Mohan**, "Linear programming models for the design of energy-efficient IoT networks with transmission constraints", *IEEE Transactions on Green Communications and Networking*, **8**(1), 391–401, 2024.
83. K. Kinra, R. Wang and **M. T. Mohan**, "Asymptotic autonomy of random attractors for non-autonomous stochastic Navier-Stokes equations on bounded domains", *Evolution Equations and Control Theory*, **13**(2), 349–381, 2024.
82. K. Kinra and **M. T. Mohan**, "Random attractors and invariant measures for stochastic convective Brinkman-Forchheimer equations on 2D and 3D unbounded domains", *Discrete and Continuous Dynamical Systems-Series B*, **29**(1), 377–425, 2024.
81. A. Kumar and **M. T. Mohan**, "Absolute continuity of the solution to stochastic generalized Burgers-Huxley equation", *Stochastics and Partial Differential Equations: Analysis and Computations*, **12**,1983–2043, 2024.

2023
80. **M. T. Mohan** "Large deviations for the two-time-scale stochastic convective Brinkman-Forchheimer equations", *Journal of Differential Equations*, **376**, 469–537, 2023.
79. K. Kinra and **M. T. Mohan**, "Large time behavior of deterministic and stochastic 3D convective Brinkman-Forchheimer equations in periodic domains", *Journal of Dynamics and Differential Equations*, **35** (3), 2355–2396, 2023.
78. R. Wang, K. Kinra and **M. T. Mohan**, "Asymptotically autonomous robustness in probability of random attractors for stochastic Navier-Stokes equations on unbounded Poincaré domains", *SIAM Journal on Mathematical Analysis*, **55**(4), 2644–2676, 2023.
77. K. Kinra and **M. T. Mohan**, "Existence and upper semicontinuity of random attractors for the 2D stochastic convective Brinkman-Forchheimer equations in bounded domains", *Stochastics*, **95**(6), 1042–1077, 2023.

76. **M. T. Mohan**, "Existence and Uniqueness of Solutions to Backward 2D and 3D Stochastic Convective Brinkman-Forchheimer Equations Forced by Lévy Noise", *Mathematical Physics, Analysis and Geometry*, **26**(3), 1–50, 2023.
75. E. M. Manuel, V. Pankajakshan and **M. T. Mohan**, "Energy-efficient data aggregation in low-power wireless networks with sensors of discrete transmission ranges: A mathematical framework for network design, *IEEE Transactions on Network Science and Engineering*, **10**(6), 3858–3870, 2023.
74. K. Kinra and **M. T. Mohan**, "$\mathbb{H}^1$-Random attractors for 2D stochastic convective Brinkman-Forchheimer equations in unbounded domains", *Advances in Differential Equations*, **28** (9–10), 807–884, 2023.
73. E. M. Manuel, V. Pankajakshan and **M. T. Mohan**, "Networking of sensors with fixed transmission ranges: Distributed data processing over graphs", *IEEE Networking Letters*, **5**(2), 76–80, 2023.
72. S. Arora, **M. T. Mohan** and J. Dabas, "Finite-approximate controllability of impulsive fractional functional evolution equations of order $1 < \alpha < 2$", *Journal of Optimization Theory and Applications*, **197**(3), 855–890, 2023.
71. A. Kumar and **M. T. Mohan**, "Large deviation principle for occupation measures of stochastic generalized Burgers-Huxley equation", *Journal of Theoretical Probability*, **36**(1), 661–709, 2023.
70. E. M. Manuel, V. Pankajakshan and **M. T. Mohan**, "Efficient strategies for signal aggregation in low-power wireless sensor networks with discrete transmission ranges", *IEEE Sensors Letters*, **7**(3), 1–4, 2023.
69. K. Kinra and **M. T. Mohan**, "Existence and upper semicontinuity of random pullback attractors for 2D and 3D non-autonomous stochastic convective Brinkman-Forchheimer equations on whole domain", *Differential and Integral Equations*, **36**(5–6), 367–412, 2023.
68. A. Kumar and **M. T. Mohan**, "Large deviation principle for occupation measures of two dimensional stochastic convective Brinkman-Forchheimer equations", *Stochastic Analysis and Applications*, **41**(2), 214–256, 2023.
67. S. Arora, **M. T. Mohan** and J. Dabas, "Approximate controllability of impulsive fractional evolution equations of order $1 < \alpha < 2$ with state-dependent delay in Banach spaces", *Mathematical Methods in the Applied Sciences*, **46**(1), 531–559, 2023.
66. S. Arora, S. Singh, **M. T. Mohan** and J. Dabas, "Approximate controllability of non-autonomous second order impulsive functional evolution equations in Banach spaces", *Qualitative Theory of Dynamical Systems*, **22**, Ar. No. 31, 2023.

2022
65. S. Arora, **M. T. Mohan**, and J. Dabas, "Approximate controllability of fractional order non-instantaneous impulsive functional evolution equations with state-dependent delay in Banach spaces, *IMA Journal of Mathematical Control and Information*, **39**(4), 1102–1141, 2022.
64. **M. T. Mohan**, "First-order necessary conditions of optimality for the optimal control of two-dimensional convective Brinkman-Forchheimer equations with state constraints", *Optimization*, **71**(13), 3861–3907, 2022.
63. E. M. Manuel, V. Pankajakshan and **M. T. Mohan**, "Data aggregation in low-power wireless sensor networks with discrete transmission ranges: sensor signal aggregation over graph", *IEEE Sensors Journal*, **22**(21), 21135–21144, 2022.
62. P. Kumar and **M. T. Mohan**, "Existence, uniqueness and stability of an inverse problem for two-dimensional convective Brinkman-Forchheimer equations with the integral overdetermination", *Banach Journal of Mathematical Analysis*, **16**, Ar. No. 58, 2022.
61. K. Kinra and **M. T. Mohan**, "Wong-Zakai approximation and support theorem for 2D and 3D stochastic convective Brinkman-Forchheimer equations", *Journal of Mathematical Analysis and Applications*, **515**(2), 126438, 2022.

60. **M. T. Mohan**, "Pontryagin's maximum principle for distributed optimal control of two dimensional Tidal dynamics system with state constraints of integral type", *Acta Applicandae Mathematicae*, **179**, Ar. No. 12, 2022.
59. P. Kumar and **M. T. Mohan**, "Well-posedness of an inverse problem for two and three dimensional convective Brinkman-Forchheimer equations with the final overdetermination", *Inverse Problems and Imaging*, **16**(5),1255–1298, 2022.
58. K. Kinra and **M. T. Mohan**, "Convergence of random attractors towards deterministic singleton attractor for 2D and 3D convective Brinkman-Forchheimer equations", *Evolution Equations and Control Theory*, **11**(5), 1701–1744, 2022.
57. **M. T. Mohan**, "The $\mathbb{H}^1$-compact global attractor for two-dimensional convective Brinkman-Forchheimer equations in unbounded domains", *Journal of Dynamical and Control Systems*, **28**, 791–816, 2022.
56. **M. T. Mohan**, "Mild solutions for the stochastic generalized Burgers-Huxley equation", *Journal of Theoretical Probability*, **35**, 1511–1536, 2022.
55. **M. T. Mohan**, "Well-posedness and asymptotic behavior of stochastic convective Brinkman-Forchheimer equations perturbed by pure jump noise", *Stochastics and Partial Differential Equations: Analysis and Computations*, **10**(2), 614–690, 2022.
54. **M. T. Mohan**, "Exponential inequalities for exit times for two dimensional stochastic tidal dynamics equations", *Stochastic Analysis and Applications*, **40**(2), 268–303, 2022.
53. **M. T. Mohan**, "Optimal control problems governed by two dimensional convective Brinkman-Forchheimer equations", *Evolution Equations and Control Theory*, **11**(3), 649–679, 2022.
52. A. Haseena, M. Suvinthra, **M. T. Mohan** and K. Balachandran, "Moderate deviations for stochastic Tidal dynamics equations with multiplicative Gaussian noise", *Applicable Analysis*, **101**(4), 1456–1490, 2022.
51. K. Kinra and **M. T. Mohan**, "Weak pullback mean random attractors for the stochastic convective Brinkman-Forchheimer equations and locally monotone stochastic partial differential equations", *Infinite Dimensional Analysis, Quantum Probability and Related Topics*, **25**(1), 2250005, 2022.
50. **M. T. Mohan**, "p-almost Hadamard Matrices and λ-planes", *Journal of Algebraic Combinatorics*, **55**(1), 89–108, 2022.
49. S. Doboszczak, **M. T. Mohan** and S. S. Sritharan, "Pontryagin maximum principle for the optimal control of linearized compressible Navier-Stokes equations with state constraints", *Evolution Equations and Control Theory*, **11**(2), 347-371, 2022.
48. S. Arora, **M. T. Mohan** and J. Dabas, "Existence and approximate controllability of non-autonomous functional impulsive evolution inclusions in Banach spaces", *Journal of Differential Equations*, **307**, 83–113, 2022.
47. V. Kumar, **M. T. Mohan** and A. K. Giri, "On a generalized stochastic Burgers' equation perturbed by Volterra noise", *Journal of Mathematical Analysis and Applications*, **506**(1), 125638, 2022.
46. **M. T. Mohan**, "Global attractors, exponential attractors and determining modes for the three dimensional Kelvin-Voigt fluids with "fading memory"", *Evolution Equations and Control Theory*, **11**(1), 125–167, 2022.
45. S. Singh, S. Arora, **M. T. Mohan** and J. Dabas, "Approximate controllability of second order impulsive systems with state-dependent delay in Banach spaces", *Evolution Equations and Control Theory*, **11**(1): 67–93, 2022.

2021 44. **M. T. Mohan**, "Large deviation principle for stochastic convective Brinkman-Forchheimer equations perturbed by pure jump noise", *Journal of Evolution Equations*, **21**, 4931–4971, 2021.

43. **M. T. Mohan**, "$\mathbb{L}^p$-solutions of deterministic and stochastic convective Brinkman-Forchheimer equations", *Analysis and Mathematical Physics*, **11**, Article No. 164, 2021.
42. T. Biswas, S. Dharmatti, P. L. N. Mahendranath and **M. T. Mohan**, "On the stationary non-local Cahn-Hilliard-Navier-Stokes system: Existence, uniqueness and exponential stability", *Asymptotic Analysis*, **125**(1–2), 59–99, 2021.
41. **M. T. Mohan**, "Moderate deviation principle for the 2D stochastic convective Brinkman-Forchheimer equations", *Stochastics*, **93**(7), 1052–1106, 2021.
40. S. Arora, **M. T. Mohan** and J. Dabas, "Approximate controllability of a Sobolev type impulsive functional evolution system in Banach spaces", *Mathematical Control and Related Fields*, **11**(4), 857–883, 2021.
39. **M. T. Mohan**, "First order necessary conditions of optimality for the two dimensional Tidal dynamics system", *Mathematical Control and Related Fields*, **11**(4), 739–769, 2021.
38. P. Kumar, K. Kinra and **M. T. Mohan**, "A local in time existence and uniqueness result of an inverse problem for the Kelvin-Voigt fluids", *Inverse Problems*, **37**(8) 085005, 2021.
37. **M. T. Mohan**, "Wentzell-Freidlin large deviation principle for stochastic convective Brinkman-Forchheimer equations", *Journal of Mathematical Fluid Mechanics*, **23**, Ar. No. 62, 2021.
36. **M. T. Mohan**, "The time optimal control of two dimensional convective Brinkman-Forchheimer equations", *Applied Mathematics and Optimization*, **84**, 3295–3338, 2021.
35. A. Khan, **M. T. Mohan** and R. Ruiz-Baier, "Conforming, nonconforming and DG methods for the stationary generalized Burgers-Huxley equation", *Journal of Scientific Computing*, **88**, Ar. No. 52, 2021.
34. K. Ravikumar, **M. T. Mohan** and A. Anguraj, "Approximate controllability of a non-autonomous evolution equation in Banach spaces", *Numerical Algebra, Control and Optimization*, **11**(3), 461–485, 2021.
33. **M. T. Mohan** and A. Khan, "On the generalized Burgers-Huxley equation: Existence, uniqueness, regularity, global attractors and numerical studies", *Discrete and Continuous Dynamical Systems-Series B*, **26**(7), 3943–3988, 2021.
32. **M. T. Mohan**, "A central limit theorem and moderate deviation principle for the stochastic 2D Oldroyd model of order one", *Stochastics and Partial Differential Equations: Analysis and Computations*, **9**(2), 510–558, 2021.
31. S. Arora, **M. T. Mohan** and J. Dabas, "Approximate controllability of the non-autonomous impulsive evolution equation with state-dependent delay in Banach spaces", *Nonlinear Analysis: Hybrid Systems*, **39**(2), 100989 (23 pages), 2021.
30. T. Biswas, S. Dharmatti and **M. T. Mohan**, "Second order optimality conditions for optimal control problems governed by 2D nonlocal Cahn-Hilliard-Navier-Stokes equations", *Nonlinear Studies*, **28**(1), 29–43, 2021.

2020
29. **M. T. Mohan**, "Dynamic programming and feedback analysis of the two dimensional Tidal dynamics system", *ESAIM: Control, Optimisation and Calculus of Variations*, **26**, Paper No. 109, 43 pp., 2020.
28. S. Arora, S. Singh, J. Dabas and **M. T. Mohan**, "Approximate controllability of semilinear impulsive functional differential systems with nonlocal conditions", *IMA Journal of Mathematical Control and Information*, **37**(4), 1070–1088, 2020.
27. T. Biswas, S. Dharmatti and **M. T. Mohan**, "Pontryagin's Maximum Principle and second order optimality conditions for optimal control problems governed by 2D nonlocal Cahn-Hilliard-Navier-Stokes equations", *Analysis (Berlin)*, **40**(3), 127–150, 2020.

26. **M. T. Mohan**, "On the two dimensional tidal dynamics system: stationary solution and stability", *Applicable Analysis*, **99** (10), 1795–1826, 2020.
25. **M. T. Mohan**, "Global and exponential attractors for the 3D Kelvin-Voigt-Brinkman-Forchheimer equations", *Discrete and Continuous Dynamical Systems-Series B*, **25**(9), 3393–3436, 2020.
24. T. Biswas, S. Dharmatti and **M. T. Mohan**, "Maximum principle for some optimal control problems governed by 2D nonlocal Cahn-Hilliard-Navier-Stokes equations", *Journal of Mathematical Fluid Mechanics*, **22**, Ar. No. 34, 1–42, 2020.
23. **M. T. Mohan**, "Well posedness, large deviations and ergodicity of the stochastic 2D Oldroyd model of order one", *Stochastic Processes and their Applications*, **130** (8), 4513–4562, 2020.
22. **M. T. Mohan**, "An extension of the Beale-Kato-Majda criterion for the 3D Navier-Stokes equation with hereditary viscosity", *Pure and Applied Functional Analysis*, **5**(2), 407–425, 2020. Invited article in the special issue on *Partial Differential Equations and Applications* in memory of *Professor Aizik Volpert*.
21. **M. T. Mohan**, "On the three dimensional Kelvin-Voigt fluids: global solvability, exponential stability and exact controllability of Galerkin approximations", *Evolution Equations and Control Theory*, **9**(2), 301–339, 2020.
20. **M. T. Mohan**, "Deterministic and stochastic equations of motion arising in Oldroyd fluids of order one: Existence, uniqueness, exponential stability and invariant measures", *Stochastic Analysis and Applications*, **38**(1), 1–61, 2020.

2019
19. K. Yamazaki and **M. T. Mohan**, "Well-posedness of Hall-magnetohydrodynamics system forced by Lévy noise", *Stochastics and Partial Differential Equations: Analysis and Computations*, **7**(3), 331–378, 2019.
18. **M. T. Mohan**, K. Sakthivel and S. S. Sritharan, "Ergodicity for the 3D stochastic Navier-Stokes equations perturbed by Lévy noise", *Mathematische Nachrichten*, **292** (5), 1056–1088, 2019.
17. **M. T. Mohan** and S. S. Sritharan, "Stochastic Navier-Stokes equation perturbed by Lévy noise with hereditary viscosity", *Infinite Dimensional Analysis, Quantum Probability and Related Topics*, **22** (1), 1950006 (32 pages), 2019.
16. **M. T. Mohan**, "On some p-almost Hadamard matrices", *Operators and Matrices*, **13** (1), 253–281, 2019.
15. K. T. Arasu and **M. T. Mohan**, "Entropy of orthogonal matrices and minimum distance orthostochastic matrices from the uniform van der Waerden matrices", *Discrete Optimization*, **31** (1), 115–144, 2019.

2018
14. **M. T. Mohan**, "Global strong solutions of the stochastic three dimensional inviscid simplified Bardina turbulence model", *Communications on Stochastic Analysis*, **12** (3), 249–270, 2018.
13. K. T. Arasu and **M. T. Mohan**, "Optimization problems with orthogonal matrix constraints", *Numerical Algebra, Control and Optimization (NACO)*, **8**(4), 413–440, 2018.
12. **M. T. Mohan** and S. S. Sritharan, "Stochastic quasilinear symmetric hyperbolic system perturbed by Lévy noise", *Pure and Applied Functional Analysis*, **3**(1), 137–178, 2018. Invited article in special issue on Control, *Optimization and PDE* dedicated to *Professor Viorel Barbu* on the occasion of his 75th birthday.
11. S. Doboszczak, **M. T. Mohan** and S. S. Sritharan, "Existence of optimal controls for compressible viscous flow", *Journal of Mathematical Fluid Mechanics*, **20**(1), 199–211, 2018.

2017
10. U. Manna, **M. T. Mohan** and S. S. Sritharan, "Stochastic non-resistive magnetohydrodynamic system with Lévy noise", *Random Operators and Stochastic Equations*, **25**(3), 155–194, 2017.

9. **M. T. Mohan** and S. S. Sritharan, "$\mathbb{L}^p-$solutions of stochastic Navier-Stokes equations subject to Lévy noise with $\mathbb{L}^m(\mathbb{R}^m)$ initial data", *Evolution Equations and Control Theory*, **6**(3), 409–425, 2017.
8. **M. T. Mohan** and S. S. Sritharan, "Stochastic quasilinear evolution equations in UMD Banach spaces", *Mathematische Nachrichten*, **290**(13), 1971–1990, 2017.

2016
7. **M. T. Mohan** and S. S. Sritharan, "Ergodic control of stochastic Navier-Stokes equation with Lévy noise", *Communications on Stochastic Analysis*, **10**(3), 389–404, 2016.
6. **M. T. Mohan** and S. S. Sritharan, "Stochastic Euler equations of fluid dynamics with Lévy noise", *Asymptotic Analysis*, **99**(1–2), 67–103, 2016.
5. **M. T. Mohan** and S. S. Sritharan, "New methods for local solvability of quasilinear symmetric hyperbolic system", *Evolution Equations and Control Theory*, **5**(2), 273–302, 2016.

2015
4. U. Manna, **M. T. Mohan** and S. S. Sritharan, "Stochastic Navier-Stokes equations in unbounded channel domains", *Journal of Mathematical Fluid Mechanics*, **17**, 47–86, 2015.

2013
3. U. Manna and **M. T. Mohan**, "Two-dimensional magnetohydrodynamic systems with jump processes: Well posedness and invariant measures", *Communications on Stochastic Analysis,* **7**(1), 153–178, 2013.
2. U. Manna and **M. T. Mohan**, "Large deviations for the shell model of turbulence perturbed by Lévy noise", *Communications on Stochastic Analysis*, **7**(1), 39–63, 2013.

2011
1. U. Manna and **M. T. Mohan**, "Shell model of turbulence perturbed by Lévy noise", *Nonlinear Differential Equations and Applications*, **18**, 615–648, 2011.

Conference Proceedings

2020
1. **M. T. Mohan** and S. S. Sritharan, "Frequency truncation method for quasilinear symmetrizable hyperbolic systems", Proceeding of ICMAA-2016, *Journal of Analysis*, **28** (1), 117–140, 2020.

RESEARCH SCHOLARS GROUP

- PhD students
  - ➢ Sagar Gautam (PhD Ongoing, 2021–)
  - ➢ Ashish (PhD Ongoing, 2022–)
- Postdoctoral fellows
  - ➢ Dr. Wasim Akram (PhD from IIT Bombay), NBHM Postdoctoral fellow, 2 September 2024 – till date.

PHD AWARDED

➢ Dr. Kush Kinra (15 Oct 2018 – 29 Nov 2023).

- Thesis Title: *Random Dynamics of Convective Brinkman-Forchheimer Equations.*
- *Excellence in Doctoral Research Award, 2024* from IIT Roorkee.

Currently Dr. Kush Kinra is a postdoctoral fellow in the Department of Mathematics, NOVA University Lisbon, Portugal (28 June 2024 – till date). Previously, he was a postdoctoral fellow at Tata Institute of Fundamental Research - Center for Applicable Mathematics (TIFR-CAM), India, from 05 Dec 2023 – 17 June 2024.

➢ Dr. Ankit Kumar (27 Dec 2018 – 27 Aug 2024)

- Thesis Title: *Well-posedness and Asymptotic Analysis of a Class of Stochastic Partial Differential Equations.*

Currently Dr. Ankit Kumar is a postdoctoral fellow in the Department of Applied Mathematics, University of Leoben, Leoben, Austria (28 June 2024 – till date).

➢ Dr. Pardeep Kumar (11 July 2019 – 13 Dec 2024)

- Thesis Title: *Inverse and Control Problems for Some Fluid Dynamic Equations.*

➢ Dr. Sumit Arora (Co-supervision with Dr. Jaydev Dabas, Department of Applied Mathematics and Scientific Computing, IIT Roorkee, 06 July 2018 – 18 May 2023).

- Thesis Title: *Approximate Controllability of Semilinear Impulsive Functional Evolution Equations.*

Currently Dr. Sumit Arora is a postdoctoral fellow in Instituto de Matemáticas - Universidad de Talca, Chile (12 Sep 2024 – till date). Previously he was a postdoctoral fellow in the Department of Mathematics, Indian Institute of Science (IISc), India from 18 Oct 2023 – 26 Aug 2024.

➢ Dr. Ebin M. Manuel (Co-supervision with Dr. Vinod Pankajakshan, Department of Electronics & Communication Engineering, IIT Roorkee, 12 July 2019 – 18 May 2023).

- Thesis Title: *Efficient Data Aggregation Schemes for Wireless Sensor Networks.*

Currently Dr. Ebin M. Manuel is an Assistant Professor in the Department of Electronics & Communication Engineering, Rajiv Gandhi Institute of Technology Govt. Engineering College, Kottayam, India.

PROJECTS

- INSPIRE Faculty Award (Award No: IFA17-MA110), Department of Science and Technology (DST), Govt of India, 2018-2023 (35,00,000/-) (Title of the project: *Control and Stochastic Analysis of Fluid Dynamic Models*).
- MATRICS (Project No. MTR/2021/000066), Department of Science and Technology-Science and Engineering Research Board (DST-SERB), 2022-25 (6,60,000/-) (Title of the project: *Stochastic Analysis of the Convective Brinkman-Forchheimer Equations*).
- Core Research Grant (CRG), Department of Science and Technology-Science and Engineering Research Board (DST-SERB), 2022-25 (26,81,096/-) (Co-investigator, Principal Investigator-Prof. Arbaz Khan, IIT Roorkee) (Title of the project: *Optimal Control of Doubly Diffusive Flows: Theoretical Studies and Numerical Analysis*).
  - Research Associate: Dr. Jai Tushar, PhD from Department of Mathematics, Birla Institute of Technology and Science, Pilani (BITS-Pilani), India, August 1, 2022 – August 30 2023.
  - Research Associate: Dr. L. N. Mahendranath Perisetti, PhD from School of Mathematics, IISER-TVM, India, November 1, 2023 – September 10, 2023.

ACHIEVEMENTS

- A.M. Mathai Award-2024, instituted by the Indian Mathematical Society for best research paper (single author) published in the year 2023.
- Prof. Bal Krishna 'Outstanding Teacher Award (2024)' from IIT Roorkee.
- One of the top 5 faculties shortlisted in the UG category (more than 80 students) for the Outstanding Teaching Award for the year 2023 at IIT Roorkee.
- One of the top 16 faculties shortlisted in the UG category and the top 10 faculties shortlisted in the PG category for the Outstanding Teaching Award for the year 2023 at IIT Roorkee.
- NBHM travel grant (2,75,000/-) to attend 10^{th} International Congress on Industrial and Applied Mathematics (ICIAM 2023), Waseda University, Tokyo, Japan, August 20–25, 2023.
- Membership of the Indian National Young Academy of Sciences (INYAS) from 2022-26.
- A.M. Mathai Award-2021, instituted by the Indian Mathematical Society for best research paper (single author) published in the year 2020.
- INSPIRE (Innovation in Science Pursuit for Inspired Research) Faculty Award (Award No: IFA17-MA110) from the Department of Science and Technology, Govt of India, 2018.
- National Research Council (NRC) Postdoctoral Fellowship under Research Associate Programs (RAP); National Academy of Sciences of United States of America (USA), 2015.
- NBHM Postdoctoral Fellowship; National Board of Higher Mathematics (NBHM), India, 2014.
- Visited the Research Group in Applied Mathematics and Stochastics; Department of Mathematics and Natural Sciences, Bergische Universität Wuppertal, Germany, December 8–22, 2014, DAAD-grant No. 57157540, "German Tunisian Doctoral Training in Applied Stochastics".
- Shyama Prasad Mukherjee (SPM) Fellowship; Council of Scientific and Industrial Research (CSIR) with Rank 2 in June 2014.
- International Travel Support (ITS) Scheme from Department of Science and Technology (DST), Government of India and CSIR Foreign Travel Grant; for attending and presenting a poster at the "8^{th} World Congress on Probability and Statistics", Istanbul, Turkey, July 09–14, 2012.
- CSIR Junior Research Fellowship (JRF) with Rank 11 in December, 2008 and Lectureship (NET) in June, 2008.
- UGC Merit Scholarship for securing 1^{st} rank in B.Sc Mathematics, University Grants Commission (UGC), Government of India, for the period of 2 years (2006–2008).
- Sir T. Madhava Rao Gold Medal for securing first rank in BSc Mathematics; Kerala University, Kerala, India, 2006.
- Kerala University Merit Scholarship for undergraduate students during 2003–2006 and Kerala University Merit Scholarship for post-graduate students during 2006–2008.

INTEGRATED MSc DISSERTATION

- Shri Lal Raghudev Ram Singh, *Boundary control of a class of partial differential equations: Well-posedness, stabilization and numerical studies*, Spring 2024 (currently Raghudev is perusing his PhD in Mathematics in University of Waterloo, Canada).
  - Two research papers (https://arxiv.org/pdf/2402.02776.pdf, https://arxiv.org/pdf/2311.07118.pdf) from his dissertation are submitted for journal publications and one is under preparation.

MASTER OF SCIENCE (MSc) PROJECT

- Anshu Kumar, *Optimal control of elliptic partial differential equations*, Spring 2024.
- Kapil Lohia, *An introduction to Malliavin calculus*, Spring 2023.
- Adarsh Tiwari, *Global solutions and blow up of semilinear heat equations*, Spring 2023.
- Anjali Khandelwal, *Monotone type operators and their applications in nonlinear partial differential equations*, Spring 2023.
- Sneha Goyal, *An introduction to the controllability of partial differential equations*, Spring 2022.
- Shamiksha, *An introduction to stochastic differential equations*, Spring 2021 (currently Shamiksha is pursuing her PhD in Mathematics at IIT Delhi).
- Pawan Kumar, *An introduction to distribution theory*, Spring 2021.
- Ajay Handa, *An introduction to mathematical optimal control theory*, Spring 2021.
- Sumit Mahajan, *Existence and uniqueness of weak solutions to the Burgers-Huxley equation with memory*, Spring 2020 (currently Sumit Mahajan is pursuing his PhD in Mathematics at IIT Roorkee).
- Manish Kumar, *Ekeland's variational principle and its applications to optimal control theory*, Spring 2019 (currently Manish Kumar is pursuing his PhD in Mathematics at IIT Roorkee).

CONFERENCE/SEMINAR/WORKSHOP ORGANIZED

- One of the conveners of *International Conference on Dynamical Systems, Control and their Applications* held at Department of Mathematics, Indian Institute of Technology Roorkee (IITR) from July 01–03, 2022 (Other conveners-Dr. D. N. Pandey, Dr. Sanjeev Kumar and Dr. Arbaz Khan) supported by SERB, Department of Science and Technology (DST), India, Intec Infonet, Council of Scientific & Industrial Research (CSIR), India, and Uttarakhand State Council for Science & Technology (UCOST), India.
- Organized two days *Symposium on Differential Equations: Analysis, Computation and Applications* in the Department of Mathematics, Indian Institute of Technology Roorkee (IITR), on December 2–3, 2021, together with Dr. Arbaz Khan, IIT Roorkee.
- Co-convener, *National Conference on Stochastic Differential Equations and Applications (NCSDEA-19)* held at Indian Institute of Space Science and Technology (IIST), Trivandrum, India jointly with Indian Institute of Technology Roorkee (IITR), India from June 6 –7, 2019 (Convener-Dr. K. Sakthivel, IIST, Trivandrum, India) sponsored by SERB, Department of Science and Technology (DST), India and National Board for Higher Mathematics (NBHM), India.
- Organized Brown Bag seminar series at AFIT for three quarters, Fall 2016, Winter 2017 and Spring 2017.

PROFESSIONAL MEMBERSHIPS AND ACTIVITIES

- Member of Indian National Young Academy of Sciences (INYAS), 2022–26.
- Member of Society of Industrial and Applied Mathematics (SIAM).
- Life time member of Indian Mathematical Society (IMS).
- Life time member of Indian Society of Industrial and Applied Mathematics (ISIAM), India.
- Board of Studies member in Mathematics (UG and PG), Mar Ivanios College (Autonomous), Thiruvananthapuram, Kerala, India.

AS A REVIEWER

- ◇ Alexandria Engineering Journal.
- ◇ American Mathematical Society (Mathscinet).
- ◇ Annali dell'Universitá di Ferrara. Sezione VII. Scienze Matematiche.
- ◇ Applicable Analysis.
- ◇ Applied Mathematics and Optimization.
- ◇ Applied Numerical Mathematics
- ◇ Communications in Mathematical Sciences.
- ◇ Communications on Pure and Applied Analysis.
- ◇ Demonstratio Mathematica.
- ◇ Discrete and Continuous Dynamical Systems-Series B.
- ◇ Evolution Equations and Control Theory.
- ◇ Indian Journal of Pure and Applied Mathematics.
- ◇ IMA Journal of Numerical Analysis
- ◇ Journal of Applied Analysis and Computation.
- ◇ Journal of Control and Decision.
- ◇ Journal of Evolution Equations.
- ◇ Journal of Functional Analysis.
- ◇ Journal of Mathematical Analysis and Applications.
- ◇ Journal of Mathematical Fluid Mechanics.
- ◇ Journal of Optimization Theory and Applications
- ◇ Mathematical Methods in Applied Sciences.
- ◇ Mathematical Models and Methods in Applied Sciences.
- ◇ Methods of Functional Analysis and Topology.
- ◇ Physica D: Nonlinear Phenomena.
- ◇ Proceedings - Mathematical Sciences.
- ◇ Proceedings of the Royal Society of Edinburgh. Section A. Mathematics.
- ◇ Qualitative Theory of Dynamical Systems.
- ◇ SIAM Journal on Mathematical Analysis (SIMA).
- ◇ SIAM Journal on Control and Optimization (SICON).
- ◇ Stochastic Analysis and Applications.
- ◇ Stochastics.
- ◇ Stochastics and Dynamics.
- ◇ Stochastic Processes and their Applications.
- ◇ Stochastics and Partial Differential Equations. Analysis and Computations.
- ◇ Turkish Journal of Mathematics.
- ◇ zbMATH, European Mathematical Society.

ADMINISTRATIVE DUTIES

- ➢ Faculty in Charge-Examination, Department of Mathematics, IIT Roorkee, 01^{st} October 2024-30^{th} September 2026.
- ➢ Department Academic Program Committee (DAPC)-Member, IIT Roorkee, 01^{st} September 2024-30^{th} August 2026.
- ➢ Department Faculty Search Committee (DFSC)-Member, Department of Mathematics, IIT Roorkee, 01^{st} January 2024-31^{st} December 2024.
- ➢ Department Research Committee (DRC)-Member, IIT Roorkee, 01^{st} September 2022-31^{st} August 2024.
- ➢ Faculty in Charge-Stores, Department of Mathematics, IIT Roorkee, 01^{st} October 2022-30^{th} September 2024.
- ➢ Department Faculty Search Committee (DFSC)-Member, Department of Electrical Engineering, IIT Roorkee, 01^{st} January 2021-31^{st} December 2021.

- ➢ Faculty in Charge-Time Table, Department of Mathematics, IIT Roorkee, 01st September 2020-30th August 2022.
- ➢ Department Administrative Committee (DAC)-Member, IIT Roorkee, 16th August 2020-15th August 2022.
- ➢ Department Academic Program Committee (DAPC)-Member, IIT Roorkee, 01st September 2020-30th August 2022.
- ➢ Department Research Committee (DRC)-Member, IIT Roorkee, 01st September 2018-30th August 2020.
- ➢ Department Faculty Search Committee (DFSC)-Convener, Department of Mathematics, IIT Roorkee, 01st March 2019-31st December 2019.
- ➢ OC Mathematical Colloquium, Department of Mathematics, IIT Roorkee, 01st September 2018-30th August 2020.
- ➢ Deputy OC Time Table, Department of Mathematics, IIT Roorkee, 01st September 2018-30th August 2020.

ACADEMIC COLLABORATIONS

- ◇ Prof. Utpal Manna, Indian Institute of Science Education and Research, Trivandrum, India.
- ◇ Prof. Sivaguru S. Sritharan, Air Force Institute of Technology, USA.
- ◇ Prof. Zdzislaw Brzezniak, Department of Mathematics, University of York, UK.
- ◇ Prof. B. Rajeev, Indian Statistical Institute, Bangalore Centre, India.
- ◇ Dr. Stefan Doboszczak, Air Force Institute of Technology, USA.
- ◇ Prof. K. T. Arasu, Wright-State University, USA.
- ◇ Dr. Hermenegildo Borges de Oliveira, Universidade de Algarve, Faro, Portugal & CMAFcIO - Universidade de Lisboa, Lisbon,Portugal.
- ◇ Dr. K. Sakthivel, Indian Institute of Space Science and Technology, Trivandrum, India.
- ◇ Dr. Kazuo Yamazaki, University of Nebraska Lincoln, USA.
- ◇ Dr. Dharmatti Sheetal, IISER-TVM, India.
- ◇ Dr. Arbaz Khan, Indian Institute of Technology Roorkee, India.
- ◇ Prof. Ricardo Ruiz-Baier, Monash University, Australia.
- ◇ Dr. Renhai Wang, School of Mathematics and Statistics, Southwest University, China.
- ◇ Dr. Jaydev, Indian Institute of Technology Roorkee, India.
- ◇ Dr. Vinod Pankajakshan, Indian Institute of Technology Roorkee, India.
- ◇ Dr. Ankik Kumar Giri, Indian Institute of Technology Roorkee, India.
- ◇ Dr. S. Karthikeyan, Periyar University, Salem, India.

ACADEMIC VISITS

- ➢ Bernoulli program on "New developments and challenges in Stochastic Partial Differential Equations" Bernoulli Center, EPFL in Lausanne, Switzerland, July 20–27, 2024.
- ➢ Prof. Zdzislaw Brzezniak, Department of Mathematics, University of York, UK from March 13-16, 2023.
- ➢ Research group in Applied Mathematics and Stochastics, Department of Mathematics and Natural Sciences, Bergische Universität Wuppertal, Germany from December 8-22, 2014.
- ➢ School of Mathematics, Indian Institute of Science Education and Research Thiruvananthapuram, India from June 13-July 14, 2017 and February 14-17, 2018.
- ➢ Department of Mathematics, Indian Institute of Space Sciences and Technology, Trivandrum, India from July 20-31, 2017, September 20-October 6, 2017, February 5-12, 2018, March 7-12, 2018, April 2-6, 2018, April 16-27, 2018, June 18-28, 2019, December 16-31, 2019 and July 11-22, 2022.
- ➢ Mathematics and Statistics Unit, Indian Statistical Institute Bangalore Centre, India from April 7-14, 2018 and May 25-31, 2019.
- ➢ Department of Mathematics, Indian Institute of Science, December 1-2, 2022.

INVITED TALK/LECTURE/SEMINAR/COLLOQUIUM/RESOURCE PERSON

2024 97. "*Large deviations for the two-time-scale stochastic convective Brinkman-Forchheimer equations*, A.M. Mathai Award lecture, 90$^{\text{th}}$ Annual Conference of Indian Mathematical Society - An International Meet, MIT World Peace University, Pune, December 23–26,2024.

96. "*Existence and uniqueness of weak solutions for the generalized stochastic Navier-Stokes-Voigt equations*, Special Session on Stochastic Evolution Systems Across Scales: Theory and Applications, 14$^{\text{th}}$ AIMS Conference at the Abu Dhabi National Exhibition Centre, in Abu Dhabi, UAE, December 16–20, 2024.

95. "*An introduction to measure theoretic probability*" (Invited Talk-Online), Department of Mathematics, Sree Narayana College for Women, Kerala, India on November 29, 2024.

94. "*Uniform large deviation principle for the solutions of two-dimensional stochastic Navier-Stokes equations in vorticity form*" (Invited Talk), 2$^{\text{nd}}$ International Conference on Recent Advances in Applied Mathematics (RAAM 2024), Department of Mathematics, IIT (BHU) Varanasi, India, July 03-05, 2024.

93. "*Stochastic Differential Equations*" (Invited Lectures), International Faculty Development Program (FDP) on Financial Mathematics, SPDE Theory, Mathematical Modeling and Current Numerical Trends (FINSMMCNT2024), Department of Mathematics, School of Advanced Sciences, VIT-AP University, India, June 24–28, 2024.

92. "*Existence and uniqueness of weak solutions for the generalized stochastic Navier-Stokes-Voigt equations*" (Invited Talk), International Conference on Stochastic Calculus and Applications to Finance - with a focus towards Functional Itô Calculus and Stochastic PDEs in distribution space, Department of Mathematics, IIT Madras, India, June 03–05, 2024

91. "*Backward uniqueness of 2D Navier-Stokes equations and its applications*", 1$^{\text{st}}$ International Conference on Recent Advancements in Applied Sciences and Technology (ICRAAST 1.0), The Applied Science Cluster, School of Advanced Engineering, UPES, Dehradun, May 29–31, 2024.

90. "*Stochastic differential equations*" (Invited Talk), Department of Mathematics, Periyar University, Salem, Tamil Nadu, India on March 21, 2024
89. "*An introduction to stochastic differential equations*", in the National Conference on "Theoretical and Computational Advances in Partial Differential Equations - NCTCA'24", PSG College of Arts & Science College, Coimbatore, Tamil Nadu, India on March 21, 2024.
88. 4 Lectures (Online) on the topics "*Basics of Partial Differential Equations*" in the Workshop on advanced topics in PDEs and its applications, School of Mathematics & Computer Science Central University of Tamil Nadu, India, December 29, 2023 - January 11, 2024.

2023
87. "*An introduction to measure theoretic probability*" (Invited Talk), KSCSTE National Mathematics Day Celebration, Govt. Women's College, Thiruvananthapuram, Kerala, India on December 22, 2023.
86. "*Navier-Stokes equations-The Million Dollar Problem*" (Invited Talk), Department of Mathematics, IIT Palakkad, Kerala, India on December 21, 2023.
85. "*An introduction to measure theoretic probability*" (Invited Talk), Department of Mathematics and Statistics Providence Women's College, Calicut, Kerala, India on December 20, 2023.
84. "*Ordinary Differential Equations*" (Invited Talk-Online), Mathematics Workshop for Undergraduate Students, Department of Mathematics, National Institute of Technology Puducherry, September 30, 2023.
83. "*2D and 3D convective Brinkman-Forchheimer equations perturbed by a subdifferential and applications to control problems*" (Minisymposium Talk), Recent Developments in Control of Fluid Flows, 2023 SIAM Conference on Control and Its Applications (CT23), Philadelphia, Pennsylvania, USA, July 24–26, 2023.
82. "*Measure Theoretic Probability*" (Invited Talk), Department of Statistics, Calicut University, Kozhikode, Kerala, India on July 11, 2023.
81. "*An Introduction to Measure Theoretic Probability*" (Invited Talk), Department of Mathematics, St Gregorios College, Kottarakara, Kerala, India on July 04, 2023.
80. "*Backward uniqueness of 2D Navier-Stokes equations and its applications*" (Invited Talk), International Conference on Differential Equations and Control Problems (ICDECP23), School of Mathematical & Statistical Sciences Indian Institute of Technology Mandi, Himachal Pradesh, India, June 15 –17, 2023.
79. "*First-order, quasi-linear equations and method of characteristics*" (Invited Talk-Online), Department of Mathematics, Vellore Institute of Technology on June 13, 2023.
78. "*Navier-Stokes equations-The Million Dollar Problem*" (Invited Talk), National Conference on Operations Research, Differential Equations, Numerical Analysis, Computing & Applications, CORDENumACA 23, Mohandas College of Engineering and Technology, Anad, Trivandrum, Kerala, India, March 23-25, 2023.
77. "*Bi-spatial random attractors and ergodicity for stochastic Navier-Stokes equations on the whole space*" (Invited Talk), Department of Mathematics, University of York, UK on March 13, 2023.
76. Three lectures, "*Minty-Browder Monotonicity Method: A Nonvariational Technique*", "*Navier-Stokes equations-The Million Dollar Problem*" and "*On the convective Brinkman-Forchheimer equations*" (Invited lectures) in the Research workshop on "Analysis of Differential Equations", Department of Mathematics, IIT Gandhinagar, March 1–3, 2023.

2022
75. "*Some fixed point theorems and their applications*", (Lecture Series), Department of Mathematics, Periyar University, Salem, India, December 3-7, 2022.

74. "*Bi-spatial random attractors and ergodicity for stochastic Navier-Stokes equations on the whole space*" (Invited Talk), Department of Mathematics, Indian Institute of Science (IISc), India on December 1, 2022.
73. "*An Introduction to Measure Theoretic Probability*" (Invited Talk), Orientation program for first year MSc Mathematics, Department of Mathematics, Cochin University of Science and Technology (CUSAT), Kerala, India on July 19, 2022.
72. "*An Introduction to Measure Theoretic Probability*" (Invited Talk), Department of Mathematics, St.Stephen's College, Pathanapuram, Kerala, India on July 15, 2022.
71. Summer Training Programme in Mathematics (STPM-2022), School of Applied Mathematics, *Theory of Ordinary Differential Equations*, St. Berchams College, Changanassery, Kerala, India, May 23-25, 2022.
70. "*Navier-Stokes equations-The Million Dollar Problem*" (Invited Talk-Online), International Conference on Mathematical Science and Its Recent Advancements (ICMSRA-2022), Department of Mathematics, Rathinam College of Arts & Science, Coimbatore, Tamil Nadu, India on May 7, 2022.
69. "*Navier-Stokes equations-The Million Dollar Problem*" (Invited Talk-Online), International Webinar on Applied Mathematics, PG & Research Department of Mathematics, Thiagarajar College, Tamil Nadu, India on April 20, 2022.
68. "*Singular Value Decomposition and Applications*" (Resource Person), Faculty Development Programme on Linear Algebra and its Applications, Department of Mathematics, LBS Institute of Technology For Women, Poojappura, Kerala, India on April 13, 2022.
67. "*Bayesian inverse problems for convective Brinkman-Forchheimer equations*" (Invited Talk), Frontier Symposium 2022, School of Mathematics, IISER Thiruvananthapuram, Kerala, India on April 10, 2022.
66. "*An Introduction to Measure Theoretic Probability*" (Invited Talk-Online), National Webinar on Fixed Point Theory & Measure Theoretic Probability, Department of Mathematics, MSM College, Kayamkulam, Kerala, India on March 22, 2022.
65. "*Navier-Stokes equations-The Million Dollar Problem*" (Invited Talk-Online), The Mathematics Colloquium, Department of Mathematics School of Physical Sciences Central University of Kerala, India on March 10, 2022.
64. "*Navier-Stokes equations-The Million Dollar Problem*" (Invited Talk-Online), Albertian Knowledge Summit, Department of Mathematics, St. Albert's College (Autonomous), Kochi, Ernakulam, Kerala, India, February 26, 2022.
63. "*Bayesian inverse problems for convective Brinkman-Forchheimer equations*" (Invited Talk-Online), Third National Conference on Control and Inverse Problems (CIP 2022) on February 25 & 26, 2022 through virtual mode jointly by Central University of Tamilnadu, Thiruvarur, Central University Kerala, Kasaragod and Periyar University Salem, Tamilnadu, on February 25, 2022.
62. "*On the convective Brinkman-Forchheimer equations*" (Invited Talk-Online), invited by Prof. Varga Kalantarov, weakly seminar on "Nonlinear Problems of Mathematical Physics" at the Department of Mathematics of Koc University, Istanbul, Turkey, January 7, 2021.
61. "*An Introduction to Measure Theoretic Probability*" (Invited Lecture-Online), Department of Mathematics, Devaswom Board College, Thalayolaparambu, Kerala, India, January 7, 2022.
60. "*An Introduction to Mathematical Optimal Control Theory*" (Invited Talk-Online), Department of Mathematics, Muthayammal Engineering College, Rasipuram , Tamil Nadu, India on January 6, 2022.

2021 59. "*Navier-Stokes equations-The Million Dollar Problem*" (Invited Talk), National Seminar (Online Mode) on Differential Equations: Analysis and Applications, Department of Mathematics, St. Thomas College, Kozhencherry, Kerala, India on December 18, 2021.

58. "*An Introduction to Measure Theoretic Probability*" (Invited Lecture), Department of Mathematics, Thiruvalluvar Govt. Arts College, Rasipuram, Tamil Nadu, India, December 9, 2021.
57. "*Navier-Stokes equations-The Million Dollar Problem*" (Invited Talk), Department of Mathematics, Periyar University, Salem, Tamil Nadu, India, December 10, 2021.
56. "*Lecture Series on Theory of Ordinary Differential Equations*" (Lecture Series), Department of Mathematics, Periyar University, Salem, Tamil Nadu, India, December 7-10, 2021.
55. "*Navier-Stokes equations-Existence, Uniqueness and Smoothness Problem*" (Invited Talk-online), Club of Mathematics, IISER Thiruvananthapuram, Kerala, India, October 9, 2021.
54. "*Global solvability of convective Brinkman-Forchheimer equations*" (Invited Talk), First conference on Partial Differential Equations in Fluid Mechanics (online), Beirut Arab University, Lebanon, June 16–18, 2021.
53. Summer Training Programme in Mathematics (STPM-2021), Session II- *Theory of Ordinary Differential Equations*, St. Berchams College, Changanassery, Kerala, India, May 29 and 31, 2021.
52. Online motivational and invited talk at Sree Narayana Collage, Nattika, Kerala, India (24 September 2021), Sree Narayana College for Women, Kollam, Kerala (24 May 2021) on the topic "*An introduction to mathematical optimal control theory*".
51. National (online) Workshop on "*Stochastic Differential Equations and Applications*", Department of Mathematics, Periyar University, Salem, Tamil Nadu, India, March 10–13, 2021.

2020
50. Online motivational and invited talks at St. Thomas College, Kozhencherry, Kerala (20 July 2020), St. George's College Aruvithura, Kerala (21 August 2020), TKM Arts and Science College, Kollam, Kerala (24 August 2020), Mother Theresa College, Nellikad, Kerala (26 August 2020), St. Jhones College, Anchal, Kerala (28 August 2020), T. K. Madhava Memorial College, Nangiarkulangara, Kerala (11 November, 2020), Sree Narayana College Punalur, Kerala (28 December 2020) on the topic "*An introduction to mathematical optimal control theory*".
49. "*On the convective Brinkman-Forchheimer equations*" (Plenary Talk), National Conference on Partial Differential Equations and Applications, Periyar University, Salem, Tamil Nadu, India, March 5–6, 2020.
48. "*Lecture series on stochastic differential equations*" (Lecture series), Department of Mathematics, Periyar University, Salem, Tamil Nadu, India, March 2–4, 2020.
47. "*George Andrews' game and Fibonacci numbers*" (Invited Talk), Department of Science and Humanities, Muthayammal Engineering College, Rasipuram, Tamil Nadu, India, March 2, 2020.

2019
46. "*Deterministic and stochastic equations of motion arising in Oldroyd fluids of order one: Existence, uniqueness, exponential stability and invariant measures*" (Invited Talk), International Conference in Conjunction with 15th Biennial Conference of Indian Society of Industrial and Applied Mathematics (ISIAM), Symposium on PDEs and applications, Bharatiar University, Tamil Nadu, India, December 7, 2019.
45. "*George Andrews' game and Fibonacci numbers*" (Invited Talk), Nurturance programme for NCERT National Talent Search (NTS) awardees (students of class XI) 2019, IIT Roorkee, December 1, 2019.
44. "*A unified approach to compressible fluid and magnetohydrodynamics and their stochastic counterpart*" (Invited Talk), Department of Mathematics, Ramaiah University of Applied Sciences, Bangalore, India, May 30, 2019.

43. "*The Beale-Kato-Majda criterion for the 3-D Navier-Stokes equation with hereditary viscosity*" (Invited Talk), National Conference on Differential Equations and Dynamical Systems, Department of Mathematics, National Institute of Technology (NIT) Puducherry, Karaikal, Tamil Nadu, India, April 5-6, 2019.
42. "*Ergodicity for the 3D stochastic Navier-Stokes equations perturbed by Lévy noise*" (Invited Talk), National Conference on Dynamical Systems and its Applications, PSG College of Arts and Science, Coimbatore, Tamil Nadu, India, March 22-23, 2019.
41. "*An introduction to measure theoretic probability*", Invited talk in the PG Department of Mathematics, PSG College of Arts and Science, Coimbatore, Tamil Nadu, India, March 22, 2019.
40. "*Necessary conditions for distributed optimal control of two dimensional tidal dynamics system with state constraints*" (Plenary Talk), Second National Conference on Control and Inverse Problems, Department of Mathematics, Central University of Tamil Nadu, Thiruvarur, March 1–2, 2019.

2018
39. "Optimization Problems with Orthogonal Matrix Constraints" (Invited talk), International Conference on Numeric Analysis, Computing and Application in Science Engineering and Technology (ICNUMACA'18), 17-20 December 2018.
38. "*Ergodicity for the 3D stochastic Navier-Stokes equations perturbed by Lévy Noise*"(Invited Talk), Fourth International Conference on "Statistics for Twenty-First Century (ICSTC - 2018), December 13-15, 2018.
37. "*Stochastic Quasilinear Evolution Equations in UMD Banach Spaces*" (Invited Talk), Department of Mathematics, Cochin University of Science and Technology (CUSAT), Kerala, India, July 17, 2018.
36. "*Invariant Measures and Ergodicity*" (Invited Talk), Department of Mathematics, Bharatiar University, Tamil Nadu, India, June 6, 2018.
35. "*Some Recent Progress in Quasilinear Hyperbolic Systems: New Local Solvability Methods and Stochastic Analysis*" (Invited Talk), National Conference on Recent Trends in Applied Mathematics (NCRTAM 2018), Department of Applied Mathematics, Bharatiar University, Coimbatore, Tamil Nadu, India, March 23, 2018.
34. "*Stochastic Quasilinear Evolution Equations in UMD Banach Spaces*" (Invited Talk), Indian Institute of Science Education and Research, Thiruvananthapuram, India on February 16, 2018.
33. "*Stochastic Quasilinear Evolution Equations in UMD Banach Spaces*" (Resource Person), National Seminar on Stochastic Differential Equations and Applications, Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore, Tamil Nadu, India, February, 9, 2018.

2017
32. "*Navier-Stokes Equations with Hereditary Viscosity: Local Solvability, Beale-Kato-Majda Criterion and Stochastic Analysis*" (Resource Person), National Conference on Stochastic Differential Equations and its Applications, Dr.N.G.P. Arts and Science College, Coimbatore, India, December 27, 2017.
31. "*Hadamard, Conference and Weighing Matrices*" (Resource Person), National Seminar on "Hadamard, Conference Matrices and Technical Strategies in Mathematics" at Milad-E-Sherief Memorial College, Kayamkulam, Kerala, India, December 18–20, 2017.
30. "*An Extension of the Beale-Kato-Majda Criterion for the 3-D Navier-Stokes Equation with Hereditary Viscosity*", Stat-Math. Symposium by Doctoral and Post-Doctoral Fellows, Indian Statistical Institute, Bangalore Centre, September 18, 2017.
29. "*Some Recent Progress in Quasilinear Hyperbolic Systems: New Local Solvability Methods and Stochastic Analysis*" (Institute Colloquium); Indian Statistical Institute, Bangalore Centre, India on August 31, 2017.

28. "*Some Recent Progress in Quasilinear Hyperbolic Systems: New Local Solvability Methods and Stochastic Analysis*" (Invited Talk); TIFR-CAM, Bangalore, India on July 12, 2017.
27. "*Ordinary and Partial Differential Equations*" (Invited Talk), Research Methodology and Mathematical Approaches for Engineering Research, Mohandas College of Engineering and Technology, Anad, Thiruvananthapuram, Kerala, India on July 07, 2017.
26. "*Some Recent Progress in Quasilinear Hyperbolic Systems: New Local Solvability Methods and Stochastic Analysis*" (Invited Talk); School of Mathematics, IISER-TVM, Kerala, India on July 06, 2017.
25. "*A Motivation to Probability Theory and Large Deviation Theory*" (Invited Talk); St Gregorios College, Kottarakara, Kerala, India on June 30, 2017.
24. Lecture Series on"*Stochastic Differential Equations in Biological Models*", Department of Mathematics, Bharatiar University, Coimbatore, Tamil Nadu, India, June 21–25, 2017.
23. "*Stochastic Quasilinear Evolution Equations in UMD Banach Spaces*" (Invited Talk); Special Session on Analysis on the Navier-Stokes equations and related PDEs, Spring Western Sectional Meeting (AMS) Washington State University, Pullman, WA, USA on 22^{nd} April 2017.
22. "*Some Recent Progress in Quasilinear Hyperbolic Systems: New Local Solvability Methods and Stochastic Analysis*" (Invited Talk); Department of Mathematics and Statistics, Wright State University, Dayton, USA on 10^{th} February 2017.
21. "*The Feynman-Kac Formula*" (Invited Talk); Department of Mathematics and Statistics, Wright State University, Dayton, USA on 13^{th} January 2017.

2016
20. "*Some Recent Progress in Quasilinear Hyperbolic Systems: New Local Solvability Methods and Stochastic Analysis*" (Invited Talk); Indian Institute of Science Education and Research Trivadrum (IISER-TVM) , Thiruvananthapuram, Kerala, India on 08^{th} December 2016.
19. "*An Introduction to Calculus of Variations*" (Invited Talk); Mar Ivanios College, Thiruvananthapuram, Kerala, India on 08^{th} December 2016.
18. "*An Introduction to Calculus of Variations and Optimal Control Theory*" (Resource Person); Workshop on Calculus of Variations and Optimal Control Theory, St. Thomas College, Kozhencherry, Pathanamthitta, Kerala, India on 07^{th} December 2016.
17. "*Some Recent Progress in Quasilinear Hyperbolic Systems: New Local Solvability Methods and Stochastic Analysis*" (Invited Talk); Indian Institute of Science (IISc), Banglaore, Karnataka, India on 06^{th} December 2016.
16. "*An Introduction to the Mathematical Theory of Optimal Control Theory*" (Inaugural Address and Invited Speaker); International Seminar on Recent Research Trends in Mathematics, Government College for Women, Thiruvananthapuram, Kerala, India on 05^{th} December 2016.
15. "*Some Recent Progress in Quasilinear Hyperbolic Systems: New Local Solvability Methods and Stochastic Analysis*" (Invited Talk); 1^{st} Northeastern Analysis Meeting(NEAM-2016), The College at Brockport, Brockport, New York, USA on 15^{th} October 2016.
14. "*New Methods for Local Solvability of Quasilinear Symmetric Hyperbolic System*" (Invited Talk); Department of Mathematics, Indian Institute of Space and Technology(IIST) Trivandrum, Thiruvananthapuram, Kerala, India on 01^{st} April 2016.
13. "*Stochastic Euler Equations of Fluid Dynamics with Lévy Noise*" (Invited Talk); School of Mathematics, IISER-TVM, Thiruvananthapuram, Kerala, India on 31^{st} March 2016.
12. "$\mathbb{L}^p-$*solutions of the Stochastic Navier-Stokes Equations Subject to Lévy Noise with* $\mathbb{L}^m(\mathbb{R}^m)$ *Initial Data*" (Invited Talk); Department of Mathematics, Mar Ivanios College, Thiruvananthapuram, Kerala, India on 28^{th} March 2016.

11. "$\mathbb{L}^p-$*solutions of the Stochastic Navier-Stokes Equations Subject to Lévy Noise with* $\mathbb{L}^m(\mathbb{R}^m)$ *Initial Data*" (Invited Talk); Department of Mathematics, Government Women's College, Thiruvananthapuram, Kerala, India on 28$^{\text{th}}$ March 2016.
10. "$\mathbb{L}^p-$*solutions of the Stochastic Navier-Stokes Equations Subject to Lévy Noise with* $\mathbb{L}^m(\mathbb{R}^m)$ *Initial Data*" (Invited Talk); International Conference on Nonlinear Dynamical Systems (ICNDS−2016), Department of Mathematics, Bharatiar University, Coimbatore, Tamil Nadu, India on 26$^{\text{th}}$ March 2016.
9. "*New Methods for Local Solvability of Quasilinear Symmetric Hyperbolic System*" (Brown Bag); Air Force Institute of Technology(AFIT), Ohio, USA on 28$^{\text{th}}$ January 2016.

2015
8. "*Stochastic Non-Resistive Magnetohydrodynamic System with Lévy Noise*" (Invited Talk); Workshop on Stochastic PDEs, Department of Mathematics, University of Pittsburgh, Pennsylvania, USA on 05$^{\text{th}}$ December 2015.
7. "*Stochastic Euler Equations of Fluid Dynamics with Lévy Noise*" (Brown Bag); Air Force Institute of Technology(AFIT), Ohio, USA on 09$^{\text{th}}$ November 2015.
6. "*Rigorous Aspects of Magnetohydrodynamic Equations*" (Brown Bag); Air Force Institute of Technology(AFIT), Ohio, USA on 25$^{\text{th}}$ June 2015.
5. Titles: *"Stochastic Navier-Stokes Equations in Unbounded Channel Domains*" and "*Stochastic Hydrodynamic Models: Existence, Uniqueness and Large Deviations*" (Invited Talk); National Conference on Recent Trends in Theory and Applications of Partial Differential Equations, Department of Mathematics, Bharathiar University, Coimbatore, Tamil Nadu, India on 27$^{\text{th}}$ March 2015.

2014
4. "*Large Deviations*" (Lecture Series); Research Group in Applied Mathematics and Stochastics, Department of Mathematics and Natural Sciences, Bergische Universität Wuppertal, Germany from December 8–22, 2014.
3. *"Stochastic Navier-Stokes Equations in Unbounded Channel Domains*" (Invited Talk); Research Group in Applied Mathematics and Stochastics, Department of Mathematics and Natural Sciences, Bergische Universität Wuppertal, Germany on 11$^{\text{th}}$ December 2014.
2. *"Stochastic Navier-Stokes Equations in Unbounded Channel Domains*" (Invited Talk); Tata Institute of Fundamental Research–Centre For Applicable Mathematics(TIFR-CAM), Bangalore, Karnataka, India on 21$^{\text{st}}$ August 2014.

2013
1. *"Stochastic Navier-Stokes Equations in Unbounded Channel Domains*" (Seminar); School of Mathematics, IISER-TVM, Thiruvananthapuram, Kerala, India on 22$^{\text{nd}}$ August 2013.

PERSONAL DETAILS

Date of Birth	: 10$^{\text{th}}$ May 1986
Nationality	: Indian
Marital Status	: Single
Permanent Address	: Manil Bhavan, Mamood, Venjaramoodu, PO: 695607, Thiruvananthapuram, Kerala, India
Father's Name	: K. Mohanan
Mother's Name	: K. Thankamani

I hereby declare that the information and details furnished above are true and correct to the best of my knowledge and belief.

December 31, 2024

Roorkee Manil T. Mohan