

Contact information :

- ❑ Beijing Institute of Mathematical Sciences and Applications
No. 544, Hefangkou Village Huaibei Town, Huairou District
Beijing 101408, China.
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Research Interests :

- ❑ Operator algebras, Subfactors, C^* -tensor categories.
- ❑ Functional analysis, Higher Category theory, Applications of Machine learning algorithms to complex analysis.

Work Experience:

- ❑ 2024 - present : Postdoc at Beijing Institute of Mathematical Sciences and Applications.

Education :

- ❑ Indian Statistical Institute, Kolkata
PhD in Mathematics
2017 - 2024
- ❑ Indian Statistical Institute, Bangalore
Master in Mathematics (M.Math), June, 2017
First Class with Distinction
- ❑ Ramakrishna Mission Residential College, Narendrapur
B.Sc(Hons.) in Mathematics, June, 2015
Percentage: 90.2

Papers/Preprints:

- ❑ *Unitary connections on Bratteli diagrams* (with Paramita Das, Shamindra Ghosh and Corey Jones). To appear in **Journal of Topology and Analysis**. <https://doi.org/10.1142/S1793525323500589>. arXiv: 2211.03822.
- ❑ *Q-System Completion of 2-functors*. **International Journal of Mathematics**, Vol. 34, No. 12, 2023. <https://doi.org/10.1142/S0129167X23500738>. arxiv : 2304.13470.
- ❑ *Q-System Completeness of unitary connections*. **Theory and Applications of Categories**, Vol. 39, 2023, No. 37, pp 1121-1151. <http://www.tac.mta.ca/tac/volumes/39/37/39-37>. arxiv : 2302.04921.
- ❑ *Quantum Sets of Compact Quantum Groups*. arXiv : 2401.02065. (Submitted)
- ❑ *Peripheral Poisson Boundary on Full Fock space*. arxiv : 2406.11167. (Submitted)
- ❑ *Positivstellensatz for C^* -tensor categories* (with Kajal Das and Shamindra Ghosh). arxiv : 2410.12141. (Submitted)
- ❑ *Frobenius subalgebra lattices in tensor categories* (with Sebastien Palcoux). arxiv : 2502.19876
- ❑ *Commuting Squares in 2-categories* (with Shamindra Ghosh). (In preparation)

Teaching Experience:

- ❑ Fall 2018, Teaching Assistant, Real analysis I (B. Stat 1st year)
- ❑ Fall 2022, Teaching Assistant, Topology I (M. Math 1st year)
- ❑ Fall 2023, Teaching Assistant, Elements of Algebraic structures (B. Stat 2nd year)
- ❑ Spring 2024, Teaching Assistant, Functional analysis (M. Math 1st year)

Honors and Awards:

- ❑ Beijing Natural Science Foundation ‘**International Scientists Projects**’ award of 2,00,000 RMB (Equivalent to 24,00,000 INR).
- ❑ ANU(Australian National University) FRT (Future Research Talent) award 2020 (Could not avail due to covid).
- ❑ 2017-2022, Council of Scientific and Industrial Research, PhD scholarship. (Declined in favour of fellowship from Indian Statistical Institute).
- ❑ 2015, Institute Gold medal for scoring highest marks in B.Sc(Hons.).

Talks:

- ❑ Unitary connections and Q-systems. Young Mathematicians in Operator algebras, Indian Statistical Institute, Delhi. (March 2024)
- ❑ Unitary connections and Q-systems. Quantum Groups Seminar (online). (June 2023)
- ❑ Q-system completion and unitary connections, A conference on ergodic theory and von Neumann algebras, National Institute of Science Education and Research (online). (August 2022)
- ❑ Q-system completion and unitary connections, Operator algebra seminar, Indian Statistical Institute, Kolkata. (June 2022)
- ❑ Unitary connections on Bratteli diagrams, Graduate seminar, Indian Statistical Institute, Kolkata. (June 2021)
- ❑ Non-degeneracy of the representation category of the annular category, Graduate seminar, Indian Statistical Institute, Kolkata. (May 2019)
- ❑ An application of Peter-Weyl theory in the theory of semi-simple Lie algebras, Graduate seminar, Indian Statistical Institute, Kolkata (June 2018)

Workshops and Conferences attended :

- ❑ Young Mathematicians in Operator algebras, Indian Statistical Institute, Delhi. (March 2024)
- ❑ Twinned Conference on C*-algebras and Tensor categories (November 2023)
- ❑ Operator Theory and Complex Geometry, Indian Institute of Science Education and Research, Kolkata. (November 2022)
- ❑ A Conference on ergodic theory and von Neumann algebras, National Institute of Science Education and Research, online. (August 2022)
- ❑ Noncommutative Analysis, Technion, online. (June 2022)
- ❑ Subfactors, Vertex Operator Algebras and Tensor Categories, BIRS workshop, online. (September 2021)
- ❑ Young Mathematicians in C*-algebras (YMC*A) 2021, online. (August 2021)

- ❑ Canadian Operator Symposium (COSy) 2021, online. (May 2021)
- ❑ East Coast Operator Algebras Symposium (ECOAS) 2020, online. (October 2020)
- ❑ Canadian Operator Symposium (COSy) 2020, online. (May 2020)
- ❑ Recent advances in operator theory and operator algebras, Indian Statistical Institute, Bangalore. (December 2018)
- ❑ International Conference on Noncommutative geometry, S.N. Bose National Centre for Basic Sciences, Kolkata. (November 2018)
- ❑ Workshop on modern aspects of function theory, operator theory and operator algebras, Indian Statistical Institute, Bangalore. (March 2018)

References :

- ❑ Dr. Shamindra Kumar Ghosh, Stat-Math Unit, 203 B.T. Road, Kolkata-700108, West Bengal, India.
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- ❑ Dr. Paramita Das, Stat-Math Unit, 203 B.T. Road, Kolkata-700108, West Bengal, India.
Email - paramita.isi@gmail.com , paramita.das@isical.ac.in
- ❑ Dr. Corey Jones, Department of Mathematics, North Carolina State University.
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- ❑ Prof. Jaydeb Sarkar, Stat-Math Unit, 8th Mile, Mysore Road RVCE Post, Bangalore-560059, Karnataka, India.
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- ❑ Dr. Jyotishman Bhowmick, Stat-Math Unit, 203 B.T. Road, Kolkata-700108, West Bengal, India.
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