

List of Publications - Aritra Das

PhD Publications (Published):

1. Bohan Li*, Aritra Das*, Spyros Tserkis, Prineha Narang, Ping K. Lam & Syed M. Assad, "*On the equivalence between squeezing and entanglement potential for two-mode Gaussian states*", Nature Scientific Reports **13**, 11722 (2023).
DOI: <https://doi.org/10.1038/s41598-023-38572-1> (* - joint first authors)
2. Vembalagu Vijendran, Aritra Das, Dax E. Koh, Syed M. Assad and Ping K. Lam, "*An expressive ansatz for low-depth quantum approximate optimisation*", IOP Quantum Science & Technology **9**, 025010 (2024).
DOI: <https://doi.org/10.1088/2058-9565/ad200a>
3. Aritra Das, Lorcán O. Conlon, Jun Suzuki, Simon K. Yung, Ping K. Lam and Syed M. Assad, "*Holevo Cramér-Rao bound: How close can we get without entangling measurements?*" Quantum **9**, 1867 (2025).
DOI: <https://doi.org/10.22331/q-2025-09-30-1867>
4. Özlem Erkılıç, Biveen Shajilal, Lorcán O. Conlon, Angus Walsh, Aritra Das, Sebastian Kish, Thomas Symul, Ping K. Lam, Syed M. Assad and Jie Zhao, "*Enhanced continuous-variable quantum key distribution protocol via adaptive signal processing*", Nature Communications Physics **8**, 406 (2025).
DOI: <https://doi.org/10.1038/s42005-025-02317-5>

PhD Publications (Under Review):

1. Özlem Erkılıç, Matthew S. Winnel, Aritra Das, Sebastian Kish, Ping K. Lam, Jie Zhao and Syed M. Assad, "*Capacity-Achieving Entanglement Purification Protocol for Pauli Dephasing Channel*", IOP Quantum Science & Technology (2024).
Preprint DOI: <https://doi.org/10.48550/arXiv.2411.14573>
2. Aritra Das, Simon Yung, Lorcán O. Conlon, Özlem Erkılıç, Angus Walsh, Yong-Su Kim, Ping K. Lam, Syed M. Assad and Jie Zhao, "*Precision Bounds for Characterising Quantum Measurements*", Nature Communications (2025).
3. Simon K. Yung, Aritra Das, Jun Suzuki, Ping K. Lam, Jie Zhao, Lorcán O. Conlon and Syed M. Assad, "*Saturating the Quantum Cramér-Rao Bound in Prioritised Parameter Estimation*", Physical Review Letters (2025).
Preprint DOI: <https://doi.org/10.48550/arXiv.2511.06704>
4. Shuixin Xiao, Yuanlong Wang, Zhibo Hou, Aritra Das, Ian R. Petersen, Farhad Farokhi, Guo-Yong Xiang, Jie Zhao and Daoyi Dong, "*Generalized collective quantum*

tomography: algorithm design, optimization, and validation", IEEE Transactions on Information Theory (2025).

Preprint DOI: <https://doi.org/10.48550/arXiv.2510.25466>

Other Publications (Published):

1. Aritra Das, Jayanta K. Bhattacharjee and T. R. Kirkpatrick, "*Transition to turbulence in driven active matter*", Physical Review E **101**, 023103 (2020).
DOI: <https://doi.org/10.1103/PhysRevE.101.023103>
2. Aritra Das and Pratyusha Chowdhury, "*Social Advantage with Mixed Entangled States*", Journal of Quantum Information Science **10**, 2 (2020).
DOI: <https://doi.org/10.4236/jqis.2020.102002>
3. Anurag, Aritra Das and Sagar Chakraborty, "*Order and chaos around resonant motion in librating spring-mass-spherical pendulum*", Nonlinear Dynamics **104**, 3407 (2021).
DOI: <https://doi.org/10.1007/s11071-021-06455-7>
4. Aritra Das and Barry C. Sanders, "*Blind quantum factorization of 21*", Physical Review A **106**, 012421 (2022).
DOI: <https://doi.org/10.1103/PhysRevA.106.012421>
5. Aritra Das, Soumya Das and Pritha Das, "*Hopf Bifurcation Analysis and Existence of Heteroclinic Orbit and Homoclinic Orbit in an Extended Lorenz System*", Differential Equations and Dynamical Systems **32**, 33 (2024).
DOI: <https://doi.org/10.1007/s12591-020-00556-2>