

Rashid Mubashir Talha

Geometry and Mathematical Physics
Scuola Internazionale Superiore di Studi Avanzati (SISSA)

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§ EDUCATION.

PhD in Geometry and Mathematical Physics *(SISSA, Italy; 2026–Present)*

Postgraduate Diploma Programme in Mathematics *(ICTP, Italy; 2025–2026)*

- Thesis: Riemannian Holonomy and Berger’s Classification. Supervisor: Dr. Pavel Putrov.

Bachelor of Science in Mathematics *(NUST, Pakistan; 2021–2025)*

- Valedictorian
- Thesis: Ehresmann Connections on Fibre Bundles. Supervisor: Dr. Tooba Feroze.

Diploma of Higher Education *(University of Warwick, UK; 2017–2021)*

- Integrated joint degree in mathematics and physics.

§ AWARDS & ACHIEVEMENTS.

- SISSA PhD fellowship 2026–2030.
- ICTP Postgraduate Diploma scholarship 2025–2026.
- President’s Gold Medal, NUST (2025). Highest CGPA in the graduating cohort.
- Rector’s Gold Medal, NUST (2025). Best final-year project and thesis in BS Mathematics.
- High Achiever Award, NUST (2025). For excellent performance in extra-curricular academic initiatives.
- 1st Position, NUST Mathematics Olympiad (2024).
- 1st Position, National Mathematics Quiz Competition, NUML. Consecutively in 2023 and 2024.
- Academic Excellence Scholarship, NUST (eight-time recipient). Highest GPA in the cohort each semester.

§ RESEARCH INTERESTS.

Differential geometry, Lie algebras, mathematical physics, and gravitational physics.

§ PUBLICATIONS & PREPRINTS.

- Gasparim, E., Simpson, C., Suzuki, B. & Talha, R. Calabi–Yau threefold singularities and their universal quilts. Preprint arXiv:2609.00021 (2026).
- Rehman, M. A. U., Ekici, Ö., Farooq, M. A., Talha, R. & Amir, S. Application of computational fluid dynamics and physics-informed neural networks in predicting rupture risk of thoracoabdominal aneurysms with fluid-structure interaction analysis. Chin. J. Phys. (2025).

§ TALKS & PRESENTATIONS.

- Delivered a student research talk at the 21st IBCAST Underwater Technologies event (Bhurban, 2024).
- Presented research at the weekly graduate mathematics seminar during undergraduate studies (NUST, 2024).
- Delivered a student talk entitled “Introduction to Gravity and its Quantisation”, organised by the NUST Physics and Astronomy Society (NUST, 2023).

§ ACADEMIC EXPERIENCE.

Participation:

- Workshop on Approaches to Quantum Gravity in de Sitter space [ICTP, 2025].
- International Bhurban Conference on Applied Sciences & Technology (IBCAST) [Bhurban, 2024].
- Recent Trends in Mathematics IV [NUST, 2024].

Service:

- Student member of the organising committee for “Recent Trends in Mathematics” (NUST, 2024).
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§ LANGUAGES & SKILLS.

- Languages: Urdu (native), English (native), Italian (beginner).
- Programming and scientific computing: Python, C/C++, Mathematica, MATLAB, L^AT_EX.