

Yitong Zhou

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EDUCATION

- **Fudan University** September 2024 - Present
Master student in Philosophy of Science and Technology (Degree Not Expected) Shanghai, China
 - GPA: 3.83/4.0
 - Award: Postgraduate Outstanding Academic Scholarship—Excellence Award
- **University of Science and Technology of China** September 2020 - June 2024
Bachelor of Science in Physics Hefei, China
 - GPA: 3.84/4.30 Ranking: 18/136
 - Award: Outstanding Student Scholarship 2021, 2022 and 2023
 - Scores of Relevant Courses: *Quantum Mechanics A* (98), *Advanced Quantum Mechanics* (97)
 - Thesis: *Motion of Particles in Teleparallel Gravity and Symmetric Teleparallel Gravity* (in Chinese)
- **Guangdong Experimental High School** August 2017 - July 2020
Secondary Education Guangzhou, China

RESEARCH

- **Underdetermination of Geometrical Trinity of Gravity** October 2024 - November 2024
Article: [Are geometrical trinity of gravity underdetermined?](#)
 - Conducted an extensive survey on philosophical debates surrounding the geometrical trinity of gravity and whether it presents a case of underdetermination.
 - Examined the empirical equivalence of the trinity and argued that it only stands under specific conditions.
 - Critically analyzed the putative interpretations of the trinity and assessed their plausibility. Proposed a unifying framework where the disagreements on spacetime ontology appear as different gauge choices without physical significance, thereby resolving the underdetermination.
- **Motion of Particles in Metric-Affine Gravity** October 2023 - May 2024
 - Explored the possibility of encoding gravity by various geometric objects;
 - Characterized the microstructure of particles by analyzing their coupling with linear connection, resulting in a non-vanishing hypermomentum;
 - Under specific simplification, derived the equations of motion for test particles in metric-affine gravity and demonstrated the effects of non-Riemannian spacetime on particle motion.
- **$\lambda\phi^4$ Cosmic Inflation Model** September 2022 - March 2023
 - Studied inflation cosmology and how inflation addresses initial condition problems of Big Bang theory.
 - Analyzed the mechanism of $\lambda\phi^4$ inflation model and determined its power spectrum of fluctuations.

EXPERIENCE

- **Student Mentor, University of Science and Technology of China** March 2024 - June 2024
 - Held office hours for *Electromagnetism A*;
 - Delivered lectures and provided assignment assistance to freshmen.
- **Teaching Assistant, University of Science and Technology of China** September 2022 - March 2023
 - Graded homework and exam papers for *Mechanics A* (taught by Prof. Zian Wei);
 - Conducted weekly office hours and provided tutorial sessions.
- **President, Astronomy Association of Guangdong Experimental High School** May 2018 - May 2019
 - Organized and delivered weekly lectures on astronomy and astrophysics;
 - Organized field trip for gazing stars with more than 100 students;
 - Organized club activities and competitions.

SKILLS

Programming: L^AT_EX, Mathematica, MATLAB, C++, Python

Language: English(academic), Mandarin(native), Cantonese(native), Leizhou(native)

LIST OF RELEVANT COURSES*

- **Mathematics:** *Mathematical Analysis B1, Mathematical Analysis B2, Linear Algebra B1, Function of Complex Variable A, Probability Theory and Mathematical Statistics, Equations of Mathematical Physics A, Computational Method, Topology.*
- **Physics:** *Mechanics A, Electromagnetism A, Thermotics A, Optics A, Atomic Physics A, Theoretical Mechanics A, Electrodynamics, Quantum Mechanics A, Advanced Quantum Mechanics, Solid State Physics B, Statistical Mechanics, Quantum Field Theory, General Relativity and Cosmology, Differential Geometry in Physics.*
- **Philosophy:** *Introduction of Logics, An Introduction to Philosophy, Research in Philosophy of Science: Topics in Evolutionary Game Theory, Selected Topics in Non-Classical Logic.*

* The capital letter and number after each course are not the grade, but rather a category marker.