

TIXUAN TAN

◇ ttx2000@hku.hk ◇ <https://ttx002000.github.io/homepage/>

EDUCATION

University of Hong Kong

Bsc in Physics (starting from September 2020)

Sept 2018 - Present

GPA: 4.18/4.3 (major 4.3/4.3)

University of Chicago

Two-Quarter Exchange

Jan 2021 - June 2021

GPA: 4.0/4.0

Peking University

Summer School

July 2021

GPA: 4.15/4.3

RESEARCH EXPERIENCE

Condensed Matter Theory

Moiré physics/Edge State physics

Jan 2021 - Present

Supervised by Prof. Wang Yao in HKU

- We study how an hBN substrate can couple with bilayer graphene system and the resulting property. Up to this moment, we observe signature of inversion symmetry breaking in bilayer graphene valley in terms of Berry Curvature, which might give rise to Valley Hall Effect in this system.
- We observe a new kind of edge state in bilayer graphene with hybridized edge. It exhibits topological phase transition between two distinct topological phases.

PROFESSIONAL SKILLS(JUN 2021)

Language

- IELTS:8/9, Dec 2021
- Mandarin-native speaker

Programming

- Mathematica, Matlab, Python, HTML

Courses

- I have taken 8 undergraduate physics courses+ 7 graduate physics courses, all of which are full grade point.
- Undergraduate Courses: QM, Advanced Stat Mech, Classical Mech, Relativity, PDE, Nuclear Physics.
- Graduate Courses: Particle Physics, Group Theory in Physics, Graduate QM(Scattering & Quantum Information), Graduate EM I&II, Graduate Stat Mech, General Relativity,

Miscellaneous

- I am currently self-learning QFT. I have written a note *An Introduction to Quantum Field Theory and Feynman Rules* posted on <https://ttx002000.github.io/homepage/Notes.html>
- I also investigate into the theory of topological insulator, as requested by Prof. Wang Yao during my project.

AWARDS&SCHOLARSHIP(NOV 2021)

Grace Wei Huang Memorial Prize-2019 Jun, academic-merit-based scholarship

Noel Chau Scholarship-2020 Jun, academic-merit-based scholarship

AEON Scholarship- 2020 May, academic-merit-based scholarship

China Soong Ching Ling Foundation, Zhi Yuan Scholarship, 2018-2022, merit-based scholarship

Lam Chi Him Memorial Prize in Physics 2020-2021, for being the best Year 2 physics student

Outstanding Poster Presentation, in the Poster Presentation of SRF and ORF Schemes and Summer Research Internship of URFP Programme 2020-21 of HKU

Undergraduate Research Fellowship, awarded by HKU

PUBLICATION AND PREPRINTS(NOV 2021)

Accepted & Published

- **T. Tan** , C. Li, and W. Yao, Edge state in AB-stacked bilayer graphene and its correspondence with SSH ladder, Phys. Rev. B **104**, 245419 (2021)