TIXUAN TAN

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EDUCATION

University of Hong Kong Sept 2018 - Present
Bsc in Physics(starting from September 2020) *GPA: 4.18/4.3(major 4.3/4.3)*

University of Chicago Jan 2021- June 2021
Two-Quarter Exchange *GPA: 4.0/4.0*

RESEARCH EXPERIENCE

Condensed Matter Theory Jan 2021 - Present(expected early Aug 2021)
Superlattice physics/Edge State physics *Supervised by Prof. Wang Yao in HKU*

- We study how a twisted bilayer hBN substrate can couple to the valley of bilayer graphene. 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. Ongoing project also includes studying how a hBN substrate can couple to twisted bilayer graphene with charge transfer
- We observe a new kind of edge state in bilayer graphene with hybridized edge. Its highly localized Wannier Orbital make it a candidate for interesting magnetic phenomena.

PROFESSIONAL SKILLS(JUN 2021)

Language

- IELTS-8/9, Sept 2019
- 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 topological insulator, as requested by Prof. Wang Yao during my project.