## Unconventional superconductivity in twisted magic angle trilayer graphene

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## Abstract

Moire superlattices provide a unique avenue for exploring unconventional superconductivity, allowing precise manipulation of electronic properties and revealing novel emergent phenomena. Magic-angle twisted trilayer graphene has become a key platform for investigating exotic quantum phases due to its tunable flat bands and displacement fields. Previous studies using transport measurements and scanning tunneling microscopy have demonstrated unconventional superconductivity in the system. Here, we report the first direct observation of double-dome superconductivity in Magic-angle twisted trilayer graphene suggesting potential differences in pairing symmetry and superconductivity origins.

Also, twisted trilayer graphene is a promising platform to study effect of moiré of moiré, I will also how our recent results in trilayer supermoiré system and show how the results can help us understand the superconding ground state in similar systems.

- 1. Z. Zhou et. al Double-dome Unconventional Superconductivity in Twisted Trilayer Graphene, arXiv:2404.09909 (2024)
- 2. Z. Zhou et. al Strong Correlations and Superconductivity in the Supermoiré Lattice, under preparation (2024)