Seminar/Talk

Correlation and topology in special-stacked multilayer graphene

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Host: Hryhoriy Polshyn

Multiple stacking sequences between atomic layers provide a unique knob for tuning electronic properties of two-dimensional materials. In this talk, I will take graphene as an example and show our experimental results of graphene multilayers in special stackings. Experimental advances allow us to fabricate high-quality special stacked multilayer graphene devices encapsulated by hBN. By electrical transport measurement, we study two different stacking sequences, rhombohedral stacking and mixed-stacking. In rhombohedral multilayer graphene, we observe a series of correlated and topological electronic states with spontaneous broken-symmetries in the crystalline and moir flat band. For the mixed stacking, we find a non-centrosymmetric multilayer graphene, and observe transport signatures of intrinsic layer polarization and multi-flat bands. References:1.Kai Liu et al, Nature Nanotechnology, 19, 188-195 (2024)2.Yating Sha et al, Science,384, 141-149 (2024)3.Jian Zheng et al, arXiv:2412.099854.Kai Liu et al, arXiv:2505.12478

Tuesday, August 5, 2025 11:00am - 12:00pm
Sunstone Bldg / Ground floor / Big Seminar Room B / 63 seats (I23.EG.102)

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