Emergent Phenomena in Graphene

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Abstract (Century Gothic 11)

In this talk, I will introduce several emergent states of graphene, including localized magnetic moments [1], non-Abelian-gauge-field-induced-localization [2-5], and topological edge states [6,7], induced by atomic defects and stacking orders. Our results demonstrate that STM is a powerful technique to direct image and characterize these novel electronic states in graphene.

References

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[6] L.-J. Yin, H. Jiang, J. B. Qiao, and **L. He***, "Direct imaging of topological edge states at a bilayer graphene domain wall". **Nature Commun.** 7, 11760 (2016).

[7] S.-Y. Li, H. Jiang, J.-J. Zhou, H. W. Liu, F. Zhang, and **L. He***, "Corrugation induced stacking solitons with topologically confined states in gapped bilayer graphene". **arXiv:1609.03313.**

Figures

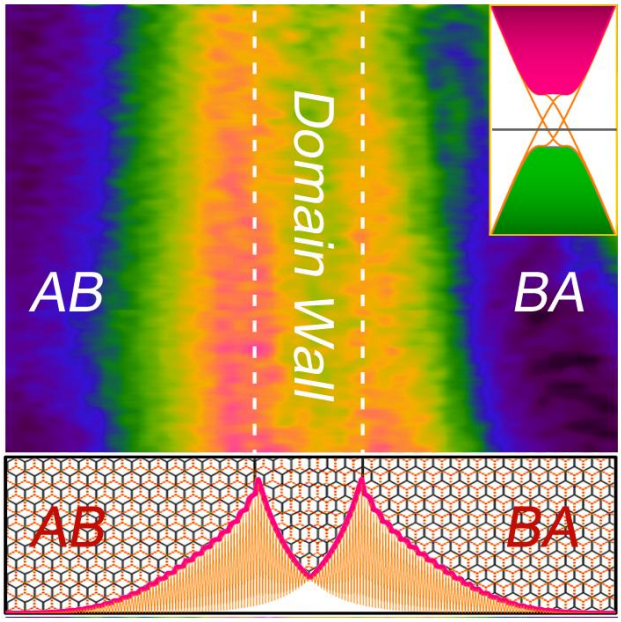

Figure 1: Direct imaging of the 1D conducting channels at the AB-BA domain wall.