Probing Nontrivial Topology in Van der Waals Crystals

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A key challenge in condensed matter is measuring the non-trivial topology responsible for novel phases and useful for future quantum computing platforms. In this talk, I will outline our recent efforts to reveal non-trivial topology via emergence of new particles. I will focus on our efforts to reveal the fermi statics of the magnetic response in RuCl3. These are key signatures of the potential Kitaev spin liquid state in this system. In addition, our new results help establish the temperature and energy regime over which non Kitaev terms are relevant. I will also briefly discuss our new results in FeTeSe, where our 2D atomic heterostructures that reveal evidence for the unique higher order, superconducting topological state using tunneling spectroscopy.

People Involved: Xiaodong Xu

Subcalendar: ABC Physics (Atomic/Bio/Condensed Matter)

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