



Colloquium

Simulating Hubbard model physics in moire semiconductors

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Host: Hryhoriy Polshyn

The strong Coulomb interactions between many electrons in solids can induce many fascinating phenomena, such as magnetism, high-temperature superconductivity, and electron fractionalization. In 1963, physicists developed a model, known as the Hubbard model, to describe such interactions in a highly simplified manner. The deceptively simple model is, however, difficult to solve accurately even with modern-day supercomputers. The physical realizations and thus simulations of the Hubbard model therefore have a vital role to play in solving this important problem. Moir materials, metamaterials built on artificial moir atoms, have emerged as a promising Hubbard model simulator in recent years. In this talk, I will discuss recent efforts on simulating the Hubbard model in moir semiconductors, with a particular focus on the problem of high-temperature superconductivity.

Friday, March 6, 2026 11:00am - 12:00pm

Office Bldg West / Ground floor / Heinzl Seminar Room (I21.EG.101)



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