

Harvard University Department of Physics Colloquium

Monday, April 13, 2020

4:30PM ~ via Zoom

Colloquium Virtual Tea

4:00PM ~ via Zoom

Quantum Hall Physics in Coupled Bilayers

The subject of “quantum Hall effects” refers to a wide range of peculiar phenomena that occur in two-dimensional electron systems in strong magnetic fields at low temperatures. Perhaps the most spectacular of these phenomena are the *fractional quantized Hall states*, first seen experimentally in 1982. Understanding these phenomena has required the introduction of radically new theoretical concepts, describing how electron-electron interactions can lead to novel states of matter.

Recent experiments on a system with two parallel layers of graphene separated by a thin insulator have revealed a *new* set of fractional quantized Hall states, in which the Coulomb interaction between electrons in different layers plays a crucial role, along with interactions between electrons in the same layer. The talk will review the phenomenology and theory of fractional quantized Hall effects in single layer systems as well as the new results for Coulomb-coupled double layers obtained by members of Philip Kim’s group at Harvard and Cory Dean’s group at Columbia.



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Join Zoom meeting

<https://harvard.zoom.us/j/663825628>

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Join by SIP conference room system

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For more information please go to : <https://www.physics.harvard.edu>