

SEMINAR IN PHYSICS

Friday, February 2, 2018
3:30-4:25 - Ross 0220

· Refreshments ·

Out of Many, Different: Emergence in Quantum Materials

John Ringler
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The technological battle for a safer and more sustainable society is largely being fought via discovery and innovation in the field of Quantum Materials, which is a sub-branch of condensed matter physics that focuses on systems of solids with strongly-correlated electronic interactions. These systems give rise to emergent functions observed on the macroscopic scale which can be harnessed in materials that lead to greater efficiencies in speed, security, information storage capacity, and energy consumption. We will discuss the nature of emergent phenomena in quantum many-body systems and briefly highlight four specific emergent functions at the forefront of modern research.

Rotational and Frictional Dynamics of the Slamming of a Door

Daniel Quin
UNC Physics Major

The curiosity of the forces that act on a door due to the amount of doors opened and closed may happen every single day. Once the door is given an initial velocity and begins to move, it already begins to decrease in speed from the factors of friction and air resistance that occur in the opposite direction of the moving door. This allows for an experiment of frictional phenomenon. The experiment will provide a Newtonian model of the accuracy of all the frictional terms involved.