

Speaker: Fiona Burnell (University of Minnesota)

Title: Subsystem Symmetry and Fractons: a glimpse into life beyond topological order

Abstract: In the last decade, a new class of phases of matter have been discovered: fracton orders. These exhibit phenomena that cannot be realized by theories invariant under continuous spatial rotations, such as point particles in 3 dimensions with mutual statistics that are neither fermionic nor bosonic, and ground state degeneracies that are sensitive to both topology and geometry. This talk will describe the basic phenomenology of these fracton orders, as well as their connections to theories with a novel kind of global symmetry, known as subsystem symmetry. It will then explore how these new ideas are connected back to experimentally relevant phenomena in solid-state systems.