

Old Dominion University Department of Physics

Colloquium

Tuesday, April 4, 2023

"Lattice Field Theory, QCD and Topological Quantum Matter"

Dr. Srimoyee Sen Iowa State University

Abstract: Topological phases of quantum materials are highly sought after due to their potential application to quantum computing. Surprisingly, they also share deep ties with lattice field theory and QCD. A classic example of this is the common thread connecting the physics of Kitaev's Majorana chain and the quantum Hall effect with lattice domain wall fermions. The latter enables QCD simulations while maintaining good global chiral symmetry. The simulation of gauged chiral symmetry however remains elusive so far. In this talk, I discuss possible ideas from topological phases that could facilitate such simulation and elaborate on the progress made in this direction.

Presentation: OCNPS 200 @ 3:00 pm Refreshments: OCNPS Atrium @ 2:30 pm

All interested persons are cordially invited to attend.