SACRAMENTO STATE

Department of Physics and Astronomy

SPRING 2023 Colloquium Series

“Di-Higgs Production— Results from the ATLAS Particle Physics Experiment”

Dr. Kathryn Grimm

California State University, East Bay

The Higgs boson particle was first seen at the Large Hadron Collider at CERN in 2012, and over the past ten years measurement of Higgs boson’s properties have all so far been in agreement with the Standard Model’s predictions. We are now turning to something trickier to measure: According to the Standard Model, the Higgs boson can interact with itself, resulting in the simultaneous production of two Higgs bosons ("di-Higgs production"). Studying this self-interaction tells us about the moment in the early universe that the Weak force split from the Electromagnetic force. (It may even tell us something about the future of the universe!) Recent results looking at Di-Higgs production will be presented along with discussion about understanding the ATLAS detector under constant radiation and the planned upgrades to the detector.

Thursday, March 9, 2023

4:00 - 5:20PM

MND1015

Open & Free to all students, faculty and public