



Department of Physics and Astronomy
SPRING 2024 Colloquium Series

“Initial Studies of diHiggs Production Through the ttHH Mode in the ATLAS Detector”

Phillip Sommerfeld

Sac State Physics Major

This paper will present the work done to build an analysis framework to study diHiggs phenomenon, specifically through the ttHH production mode. The analysis builds off previous models employed during Run 2 and Run 3 at the LHC. Using Monte-Carlo simulation data we model how future detector technology will respond to the increased luminosity values of the HL-LHC. Ultimately, the goal is to probe the self-coupling of the Higgs boson in order to determine if the Higgs is fully "standard-model-like" or if future "Beyond Standard Model" theories will be required to fully explain the properties of the Higgs boson and its field.

***Tuesday, April 30, 2024**
4:00 - 5:20PM

MND1015

Open & Free to all students, faculty and public