

Abstract Submitted
for the CUWIP22 Meeting of
The American Physical Society

Development of Charm Identification Technique for Higgs-charm Coupling TALIA SAARINEN, University of California, Berkeley, CERN ATLAS PROJECT COLLABORATION — The Higgs boson was discovered by the ATLAS and CMS experiments at CERN in 2012, but properties of Higgs-charm coupling remain unprobed due to the rarity of this decay mode and the difficulty of identifying charm quarks in such events. The goal of this project is to improve upon previous methods of identifying or "tagging" tracks resulting from the decay of charm quarks. We analyze simulated top quark pair data from the ATLAS experiment to evaluate the effectiveness of track variables in distinguishing charm decays from background and other decay modes. 19 of the 24 track-associated variables evaluated were determined to be effective in distinguishing tracks resulting from Higgs-charm coupling.

Talia Saarinen
University of California, Berkeley

Date submitted: 10 Jan 2022

Electronic form version 1.4