

Abstract Submitted  
for the APR21 Meeting of  
The American Physical Society

**Measurement of the muon antineutrino charged-current inclusive cross section using the NOvA near detector**<sup>1</sup> CONNOR JOHNSON, Colorado State University, NOVA COLLABORATION — Neutrino cross section measurements serve two major purposes; they can provide a deeper understanding of particle interactions, and they help to lower one of the leading systematic uncertainties on neutrino oscillation measurements. In this talk, I will present current and future work towards a muon antineutrino inclusive cross section measurement using data taken from the NOvA's near detector. There are various stages in performing this analysis which include - among other work - the training of a muon track classifier, cut optimization, energy estimation, and purity and efficiency studies using Monte Carlo simulation. I will discuss the work which has already gone into this analysis, and future work that remains to be done. In addition, I will discuss various challenges unique to the antineutrino measurement which have been foreseen and how we plan to address them.

<sup>1</sup>This work was supported by the Office of High Energy Physics within the U.S. Department of Energy Office of Science under Award Number DE-SC0017740

Connor Johnson  
Colorado State University

Date submitted: 08 Jan 2021

Electronic form version 1.4