

Abstract Submitted  
for the APR17 Meeting of  
The American Physical Society

**Physics Impact of Improvements to the Beam Timing Resolution at MicroBooNE**<sup>1</sup> TIA MICELI, New Mexico State Univ, MICROBOONE COLLABORATION — The MicroBooNE detector is a liquid argon time-projection chamber (89 tons active mass) at Fermilab designed to measure interactions of neutrinos from the Booster Neutrino Beamline (BNB) and the Neutrinos at the Main Injector (NuMI) beamline. During the first year of data-taking, the arrival time of the neutrinos was only understood with an accuracy of 100 ns for the BNB, and was unverified for NuMI. A set of upgrades has been implemented that will reduce the uncertainty in beam delivery time by two orders of magnitude, significantly improving our ability to observe neutral-current elastic interactions in the BNB, and kaon decays at rest using NuMI. This talk explains the improvements in neutrino arrival timing, their impact on these two analyses, and the overall benefit to all other MicroBooNE measurements.

<sup>1</sup>DOE Office of Science

Miceli Tia  
New Mexico State Univ

Date submitted: 30 Sep 2016

Electronic form version 1.4