Abstract Submitted
for the DNP17 Meeting of
The American Physical Society

Measuring the Neutron Cross Section and Detector Response from Interactions in Liquid Argon NICHOLAS KAMP, University of Michigan, CAPTAIN COLLABORATION — The main objective of the CAPTAIN (Cryogenic Apparatus for Precision Tests of Argon Interactions with Neutrinos) program is to measure neutron and neutrino interactions in liquid argon. These results will be essential to the development of both short and long baseline neutrino experiments. The full CAPTAIN experiment involves a 10 ton liquid argon time projection chamber (LArTPC) that will take runs at a low-energy (˜10-50 MeV) stopped pion neutrino source. A two ton LArTPC, MiniCAPTAIN, will serve as a prototype for the full CAPTAIN detector. MiniCAPTAIN has been deployed to take data at the Los Alamos Neutron Science Center in late July. During this run, it will both test new LArTPC technologies and measure the cross section and detector response of neutron interactions in liquid argon. The results will be helpful in characterizing neutral current neutrino interactions and identifying background in future neutrino detection experiments. This poster gives an overview of these results and a status update on the CAPTAIN collaboration.

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Date submitted: 02 Aug 2017 Electronic form version 1.4