Abstract Submitted
for the APR18 Meeting of
The American Physical Society

Search for CEvNS at the SNS with the COHERENT experiment[1]
IVAN TOLSTUKHIN, Indiana Univ - Bloomington, COHERENT COLLABORATION — The COHERENT experiment at the Oak Ridge National Laboratory (ORNL) Spallation Neutron Source (SNS) aims to study coherent elastic neutrino nucleus scattering (CEvNS) with different detector technologies. The first observation of CEvNS was recently made by the COHERENT experiment with a 14 CsI detector.[2] The result is in agreement with the standard model prediction. This initial data already improves constraints on non-standard neutrino interactions. In addition, COHERENT has a 185 NaI crystal array, a 22 LAr detector and is planning to deploy a 10 PPC HPGe. The single-phase LAr detector (CENNS-10) started data-taking in Dec. 2016 and will provide results on CEvNS from a light nucleus where nuclear form factors are close to unity. The motivation for CEvNS detection, COHERENT experiment overview, the first CEvNS measurement, and a survey of the future experimental program will be presented.

[1]COHERENT collaborators are supported by the U. S. Department of Energy Office of Science, the National Science Foundation, NASA, and the Sloan Foundation
[2]http://science.sciencemag.org/content/early/2017/08/02/science.aao0990 *D. Akimov et al., Science* **357**, 1123 (2017).

Ivan Tolstukhin
Indiana Univ - Bloomington

Date submitted: 12 Jan 2018 Electronic form version 1.4