

## Physics Opportunities in the Near DUNE Detector hall: PONDD



Contribution ID: 10

Type: not specified

# Lepton-Number-Charged Scalar and Neutrino Beamstrahlung

*Tuesday, 4 December 2018 10:00 (30 minutes)*

Baryon number minus lepton number —  $B-L$  — appears to be a good symmetry of Nature. If it turns out that  $B-L$  is, in fact, a fundamental symmetry, then nonzero neutrino masses must be Dirac in character, but there are plenty of opportunities to discover new physics related to  $B-L$  conservation. In this talk, I present recent results (arXiv:1802.00009) concerning a new, Standard-Model-singlet scalar with nonzero  $B-L$  charge that couples to (anti)neutrinos like a Majoron without giving neutrinos a Majorana mass. I will discuss constraints on this scenario, including those from accelerator neutrino experiments like DUNE, and will briefly mention other phenomena related to the potential existence of this new scalar.

**Presenter:** BERRYMAN, Jeffrey (Northwestern University)

**Session Classification:** EMPHATIC/Light Dark Sectors I