

DNP17-2017-020003

Abstract for an Invited Paper  
for the DNP17 Meeting of  
the American Physical Society

**Effective theory approach to neutrinoless double beta decay**

VINCENZO CIRIGLIANO, Los Alamos National Laboratory

After a short introduction on neutrinoless double beta decay as probe of lepton number violation, I will discuss an effective field theory approach to the problem. I will begin by classifying the possible sources of lepton number violation in the effective theory that describes new physics beyond the Standard Model. Then, for each major class of operators (including the light Majorana neutrino mass), I will discuss the matching to hadronic and nuclear descriptions, using chiral effective theory as the organizing principle. I will highlight recent progress in this matching and recent results from lattice QCD and few-body calculations.