DNP16-2016-020253

Abstract for an Invited Paper for the DNP16 Meeting of the American Physical Society

## Life and Death of a Free Neutron

NADIA FOMIN, University of Tennessee

Modern neutron sources provide extraordinary opportunities to study a wide variety of physics topics, including the physical system of the neutron itself. One of the processes under the microscope, neutron beta decay, is an archetype for all semi-leptonic charged-current weak processes. Precise measurements of the correlation parameters in neutron beta decay as well as the neutron lifetime itself are required for tests of the Standard Model and for searches of new physics. The state of the field will be presented and a program of current and future experiments and potential impacts explored.