SES21-2021-000211

Abstract for an Invited Paper
for the SES21 Meeting of
the American Physical Society

Tipping the nuclear scale: beta-decay spectroscopy of (very) neutron rich nuclei

MIGUEL MADURGA, University of Tennessee, Knoxville

The continuing development of production and separation techniques allowing for the study of nuclei far away from the line of stability has spurred the low energy nuclear field for the past 3 decades. Large proton-neutron imbalances drive emerging exotic phenomena such as shape coexistence or halo distributions of nuclear matter, which in turn have helped refine our understanding of the nuclear interaction in the nuclear medium. In this talk I will discuss our experimental efforts using beta-delayed gamma and neutron spectroscopy to characterize the nuclear structure of neutron rich nuclei around doubly magic 32Mg, 78Ni, and 132Sn. In particular I will concentrate in the role nucleon excitations across shell closures play in all three regions, driving both increasingly smaller decay-half lives and larger neutron branching ratios.