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## Single-neutron properties of nuclei probed with the ISOLDE Solenoidal Spectrometer

*Thursday, December 1, 2022 2:00 PM (25 minutes)*

The ISOLDE Solenoidal Spectrometer was fully commissioned in 2021 with the new silicon array developed by the University of Liverpool installed. This array makes use of double-sided silicon strip detectors, with ASIC readout, to determine the position of interaction and the energy of light ejectiles when they return to the beam axis following reactions of HIE-ISOLDE accelerated beams with a light ion target.

ISS has now completed two full physics campaigns focussing on measurements of the  $(d,p)$  reaction to probe single-neutron behaviour in various systems. Highlights have included, but are not limited to; measurements of the evolution of single-neutron properties outside  $N=126$ , with a measurement of the  $^{212}\text{Rn}(d,p)$  reaction, and  $N=16$  with a study of states populated in  $^{27}\text{Na}$ ; probing single-particle structure in to the  $N=20$  island of inversion with a measurement of the fragmentation of strength in  $^{31}\text{Mg}$ ; a study of  $^{12}\text{Be}$  probed via a measurement of the  $^{11}\text{Be}(d,p)$  reaction populating final states above the Sn and S2n energies.

This talk will give an overview of the commissioning of the ISS detectors and a summary of the physics campaigns from the last two years.

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**Session Classification:** Novel Techniques for Reactions & Decay Spectroscopy