

Abstract Submitted  
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**Commissioning of the HELIOS Spectrometer at ATLAS<sup>1</sup>** J.C. LIGHTHALL, Western Michigan University, HELIOS COLLABORATION<sup>2</sup> — The HELical Orbit Spectrometer (HELIOS) at the ATLAS facility of Argonne National Laboratory is designed to study inverse-kinematic nucleon transfer reactions using exotic beams. These reactions are of particular interest for nuclear structure away from stability and for nuclear astrophysics. The spectrometer features a 3 Tesla, 90 cm bore superconducting solenoid. Inside the HELIOS solenoid is a hollow detector array aligned with the magnetic field axis, in line with the target. This unique detector geometry has significant advantages over conventional detectors. To demonstrate its principle of operation, HELIOS will be commissioned by studying the well-known  ${}^2\text{H}({}^{28}\text{Si},p){}^{29}\text{Si}$  reaction in inverse kinematics at a bombarding energy of 8 MeV/u. The level density of the residual  ${}^{29}\text{Si}$  nucleus makes this reaction well suited for demonstrating the resolution and acceptance properties of the spectrometer. Experimental results will be presented.

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