

Abstract Submitted
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The HELIOS silicon detector array¹ S.T. MARLEY, Western Michigan University, HELIOS COLLABORATION — A prototype detector array has been constructed for use in the Helical Orbit Spectrometer (HELIOS) at the ATLAS facility at Argonne National Laboratory. HELIOS is a high-resolution spectrometer for use in studying reactions in inverse kinematics on hydrogen or helium targets. HELIOS consists of a large bore, 3T superconducting solenoid oriented with the magnetic and beam axes aligned. The detector array is comprised of four modules each with six 1.2 x 5.6cm position sensitive silicon detectors. On each module, the detectors were affixed with conductive epoxy and wire bonded to custom made multi-layer printed circuit boards. To keep the radial extent of the detectors to a minimum, the modules were assembled on a hollow 1.6 x 1.6 x 68.8 cm aluminum rail centered on the beam axis located upstream from the target. To characterize the timing, position, and energy resolutions, the detectors were evaluated at the Western Michigan University Accelerator Laboratory using elastic proton-proton scattering. The construction, assembly and preliminary testing of the array will be discussed.

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