

Abstract Submitted
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A PbWO₄-based Neutral Particle Spectrometer in Hall C at 12 GeV JLab¹ ARTHUR MKRTCHYAN, VARDAN TADEVOSYAN, HAMLET MKRTCHYAN, ANSL/Yerevan, ROLF ENT, Jefferson Lab, TANJA HORN, Catholic University of America, NPS COLLABORATION — Design studies and component tests have been performed to enable a lead tungstate based neutral particle spectrometer (NPS) in Hall C. This NPS is foreseen to act in tandem with the existing high momentum spectrometer (HMS) for precision coincidence experiments with high luminosity. The NPS will be remotely rotatable accessing an angular range between 5.5 and 60 degrees. It would consist of a sweeping magnet and a 25 msr lead tungstate based detector in a temperature controlled frame. Extensive simulations have been performed to verify operation in a high luminosity environment. An active base has been developed to provide an excellent linearity up to rates per lead tungstate crystal above 1 MHz. A radiation test of the readout chain of one crystal has been performed. In this talk we will introduce the NPS, design studies, and discuss the test results and future plans.

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