

Abstract Submitted
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Development of a neutron time projection chamber¹ PATRICK OMALLEY, Rutgers University, MIKE HEFFNER, NATHANIEL BOWDEN, GI-ANPAOLO CAROSI, Lawrence Livermore National Lab — Time projection chambers (TPCs) have unique capabilities for the detection of fast neutrons, particularly from special nuclear materials. This includes the ability to determine directional information from a single scattering and a higher efficiency compared to other point methods, such as the scatter camera. Also, neutron TPCs are sensitive to the entire 4π range and automatically reject gamma ray events since the ionization profile from Compton scattering is vastly different from the scattering of heavier particles. The most recent progress in the neutron TPC hardware and software development will be discussed. Preliminary results will be presented, including a calibration analysis, the directional sensitivity, and the efficiency of the detector.

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