

Abstract Submitted
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Simulation of Neutron Wall and Charged Particle Veto Wall for Heavy Ion Collision¹ JIASHEN TANG, NSCL/MSU and Chinese University of Hong Kong — Comparison of neutrons and protons emitted in heavy ion collisions is an observable to probe the density dependence of symmetry energy [Cou16]. The dimension of Neutron Wall (NW) at NSCL is about 2x2 m² which is made of 25 Pyrex tubes filled with liquid Scintillator NE213 that detects recoil protons when neutron interacts with the scintillator. Although it attains excellent discrimination of γ - and neutron using Pulse Shape Discrimination method, it fails to discriminate charged particles from neutrons. To ensure 100% rejection of charged particles, we plan to build a Charged Particle Veto wall (VW), which will consist of 25 1-cm thick plastic scintillator bars placed directly in front of NW. Simulations using NPTool [Mat16] have been performed to determine the exact design of the VW. To make sure the VW completely covers the NW, overlap of alternate bars is needed. In the poster, I will show the advantage and disadvantage of the positioning plastic bars in a horizontal versus a vertical position as well as position correlation between NW and VW for signal matching. [Cou16] D. D. S. Coupland et al, Physical Review C **94**, 011601(R) (2016) [Mat16] A. Matta et al, J. Phys. G: Nucl. Part. Phys. **43** (2016) 045113

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Jiashen Tang
NSCL/MSU and Chinese University of Hong Kong

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