

Abstract Submitted  
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**Performance of the HBD for the J-PARC E16 experiment KOKI**

KANNO, Graduate School of Science, The University of Tokyo, THE J-PARC E16 COLLABORATION — A Hadron Blind Detector (HBD) is a mirror-less and window-less Čerenkov detector for an electron identification. It consists of a radiator operated with pure  $\text{CF}_4$ , a UV-photon sensitive GEM detector which is directly coupled to the radiator, and a pad readout. The GEM detector consists of a triple-GEM stack on top of which CsI is evaporated. The number of photoelectrons that the HBD can detect per incident electron is the most important value, since it discriminates electrons from other charged particles by using pad charge information. We have developed two types of large GEM foils ( $30 \times 30 \text{ cm}^2$ ) which have different hole pitches to optimize a hole/pitch ratio. We performed a beam test with  $1.0 \text{ GeV}/c$  positrons at Research Center for Electron Photon Science, Tohoku University. We observed  $\sim 7.6$  photoelectrons with 55 (hole diameter in copper ( $\mu\text{m}$ ))/140 (hole pitch ( $\mu\text{m}$ )) GEM foils and  $\sim 10.7$  photoelectrons with 55/110-GEM foils. The results are consistent with the expected result calculated based on the performance of each detector element. Additionally, our GEM foils provide a trigger. Developments of a readout circuit for a trigger is in progress.

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