

Abstract Submitted  
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**Study of Position Dependence of GEM Prototype Detector Response and Gain Using Particle Beams** NAM TRAN, DANRAE PRAY, SAFAT KHALED, SEONGTAE PARK, JAEHOON YU — The physics requirements at future International Linear Collider requires high precision measurements of jets of particles emerging from the collision. To meet this requirement, the University of Texas at Arlington High Energy Physics group has been developing the Digital Hadron Calorimeter for the future International Linear Collider using Gas Electron Multiplier (GEM) technology. The group has successfully constructed prototypes of various sizes from 10cmx10cm to 30cmx30cm and characterized them on the bench. The team recently conducted a beam test of four 30cmx30cm prototype GEM chambers at Fermi National Accelerator Laboratory. In this talk, we present the result of the beam test data analysis, in particular the position dependence of chamber responses and gains to understand the uniformity of the prototype chamber performance.

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