

Abstract Submitted  
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**Pressure Dependence Studies on UTA GEM Based Digital Hadron Calorimeter** EDWIN BALDELOMAR, University of Texas at Austin — The University of Texas at Arlington High Energy Physics group has been developing a Digital Hadron Calorimeter (DHCAL) for the future Linear Collider (LC) using the Gas Electron Multiplier (GEM) technology. The group has built several prototype chambers of various dimensions up to 30cmx30cm. The prototypes have been successful in measuring charges deposited traversing incident particles from cosmic rays and radioactive sources. The data was taken using the 13bit kPIX ASIC chips. This presentation includes the pressure dependence of the GEM chamber gain and corresponding correction factors for chamber responses to cosmic rays and Fe 55 data. The pressure dependence will be compared against monte carlo simulations using the GEANT. In addition, the significance of the results to the future GEM DHCAL for use in the future linear collider experiments and other purposes, such as medical imaging and home land security, will be presented.

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