

Abstract Submitted
for the DNP17 Meeting of
The American Physical Society

Multi-layer Thick Gas Electron Multiplier (M-THGEM) Simulations at Low Pressure for High-Gain Operation ADAM FRITSCH, Gonzaga Univ, MARCO CORTESI, WOLFGANG MITTIG, National Superconducting Cyclotron Laboratory, Michigan State Univ — The Multi-layer Thick Gaseous Electron Multiplier (M-THGEM) is a novel hole-type gaseous electron multiplier produced by multi-layer printed circuit board technology; it consists of a densely perforated assembly of multiple insulating substrate sheets sandwiched between thin metallic-electrode layers¹. The electron avalanche processes occur along the successive multiplication stages within the M-THGEM holes, under the action of strong dipole fields resulting from the application of suitable potential differences between the electrodes. Using ANSYS Maxwell and Garfield, Monte Carlo simulations have been performed to find geometries that maximize the achievable gain, electron collection efficiency, ion feedback, energy resolution of M-THGEM devices at low pressure with pure gases. Comparisons of the calculations with measurements of a prototype device are ongoing. Preliminary results will be presented.

¹Cortesi *et al.*, arXiv:1606.07314v1 [physics.ins-det]

Adam Fritsch
Gonzaga Univ

Date submitted: 29 Jun 2017

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