A GEM-MWPC Hybrid Readout for Negative Ion Drift

We present progress on development of a new low background charge readout plane for use in directional dark matter detectors based on low pressure SF-6 negative ion gas. This form of readout aims to provide the advantages of thick Gas Electron Multipliers as a means to producing high avalanche gain, with a simple wire readout that can provide low noise operation. Results are presented for operation of a test set-up using a CERN-produced thick GEM and a wire array mounted 1mm from the surface of the GEM, including observation of alpha tracks and gain.

Primary authors: SPOONER, Neil (University of Sheffield); BARACCHINI, Elisabetta (GSGC)