



Contribution ID: 158

Type: Oral

HARPO - TPC for High Energy Astrophysics and Polarimetry from the MeV to the TeV

Wednesday, 4 June 2014 16:20 (20 minutes)

Observation of high-energy sources requires gamma-ray telescopes aboard balloons or satellites to study thermal and non thermal phenomena (black holes, neutron stars, active galactic nuclei, supernovae, supernova remnants, and gamma-ray bursts). In recent years, R&D has been mainly active to improve the sensitivity required for polarimetry. In this context, a concept of a Time Projection Chamber (TPC) was proposed as an active target and pair production imager with a high angular resolution and background reduction capabilities.

After introducing the HARPO TPC and its potential as gamma-ray telescope, we will present the characterization of the TPC readout plane which provides gas electron amplification within a microstructure composed of the association of a Micromegas and Gas Electron Multiplier. Recent results using cosmic-ray events will be shown and finally the beam test, scheduled this year, with polarized photon at MeV energy will be discussed.

Summary

D. Bernard, P. Bruel, M. Frodin, Y. Geerebaert, B. Giebels, P. Gros, D. Horan, P. Poilleux, I. Semeniouk, S. Wang
LLR, Ecole Polytechnique CNRS/IN2P3, 91128 Palaiseau France
S. Anvar, D. Attie, P. Colas, A. Delbart, D. Gotz, P. Sizun
CEA, Irfu, CEA-Saclay, F-91191 Gif-sur-Yvette, France

Primary authors: Dr ATTIE, David (CEA/DSM/DAPNIA/SPP); GROS, Philippe (Ecole Polytechnique (FR))

Presenter: GROS, Philippe (Ecole Polytechnique (FR))

Session Classification: II.b Astro & Space

Track Classification: Experiments: 2b) Astrophysics and Space Instrumentation