

News

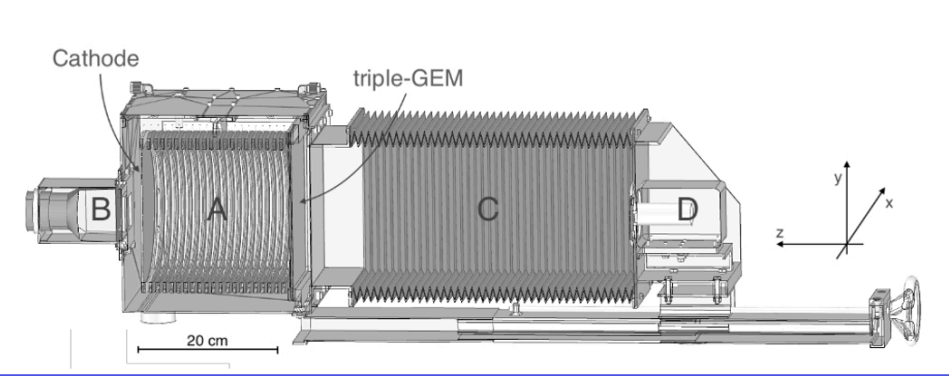
CYGNO Meeting

Main results of 2020 to CSN2:

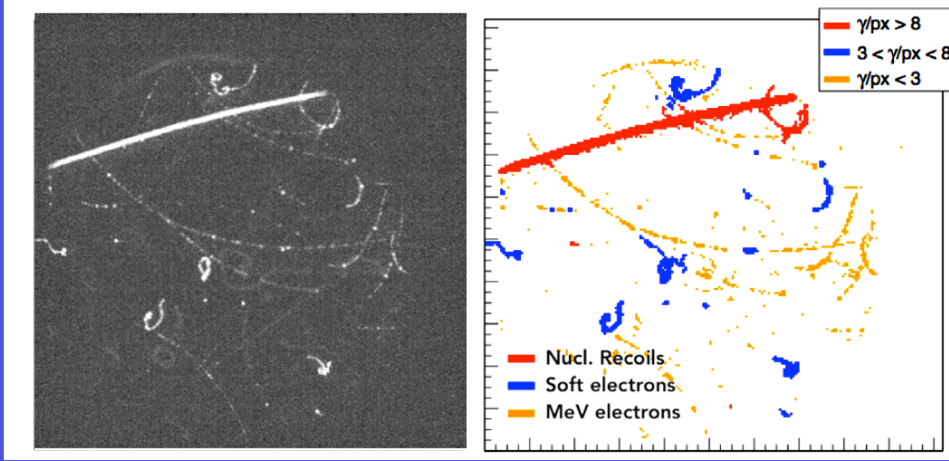
- LIME operation and performance (largest Optical Readout TPC);
- First evidence of electro-luminescence;
- Measurement of electron rejection below 10 keV;
- Evidence of good light yield with Isobutane

GEM IMAGERS FOR DIRECTIONAL DARK MATTER SEARCH

LEMON: 7 liters TPC. 4 Mpixels CMOS camera



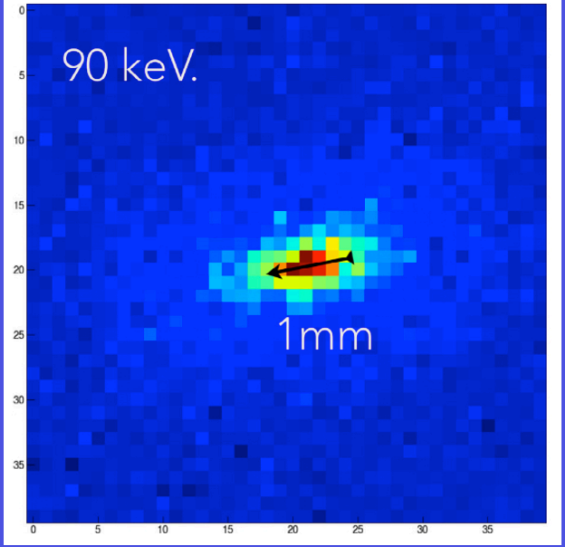
Am-Be Source, 1-10 MeV n



D. Pinci et al, Nucl. Instr. Meth. A936(2019)453
E. Baracchini et al, JINST 15(2020)P10001

Gran Sasso Science Institute
INFN Roma and Frascati
Univ. La Sapienza
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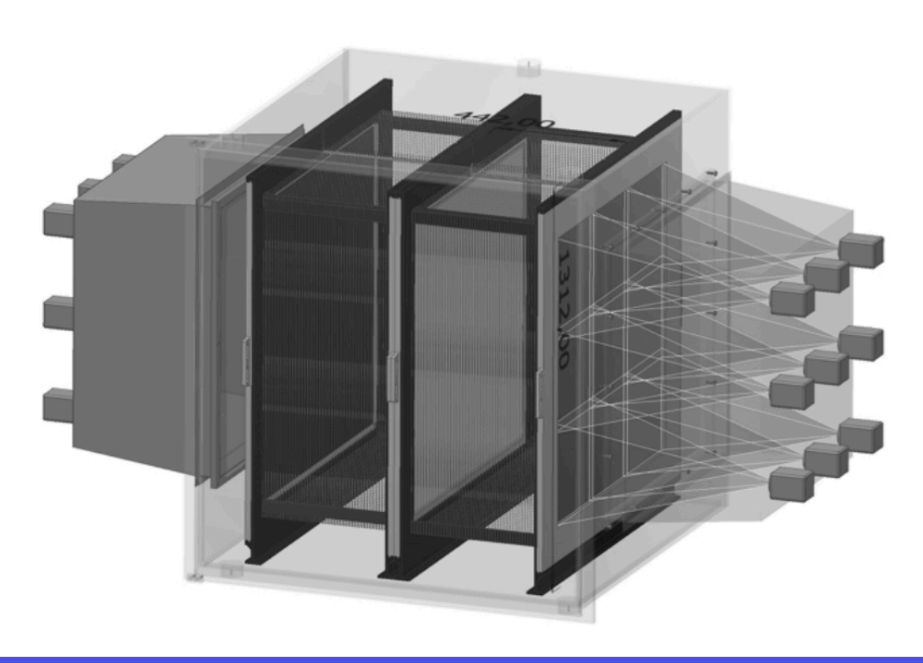
He RECOIL FROM 2.45 MeV n



G. Cavoto et al, Nucl. Instr. Meth. A598(2020)

CYGNO: DIRECTIONAL DARK MATTER SEARCH

ONE m³ DEMONSTRATOR: TRIPLE GEM TPC WITH OPTICAL READOUT
He-CF₄ AT ONE BAR



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FURTHER DEVELOPMENTS NEEDED:

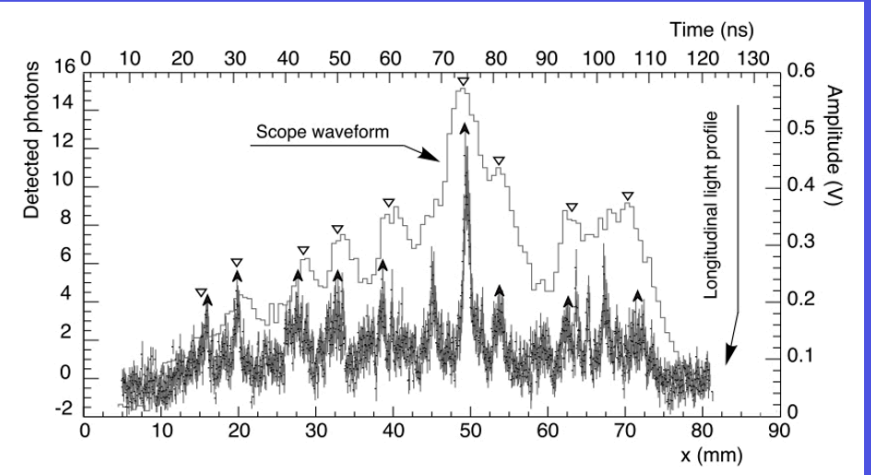
- LONG-TERM STABILITY
- NON-LINEARITY OF RESPONSE
- TIME ZERO
- FASTER OPTICAL RECORDING
50 Hz. → 1 kHz
-

I. Abritta Costa, E. Baracchini et al, J. Phys. Conf. Ser. 1498 (2020) 012016

Sauli talk at GSSI

FROM 2-D TO 3-D FROM CLUSTERS CORRELATION

OPTICAL GEM SCINTILLATION AND PM SIGNAL



E. Baracchini et al,
J. Phys. Conf. Series 1498(2020)12016

3-D TRACK RECONSTRUCTION
FROM CORRELATED CLUSTERS
Z RESIDUALS: 100 μm rms

