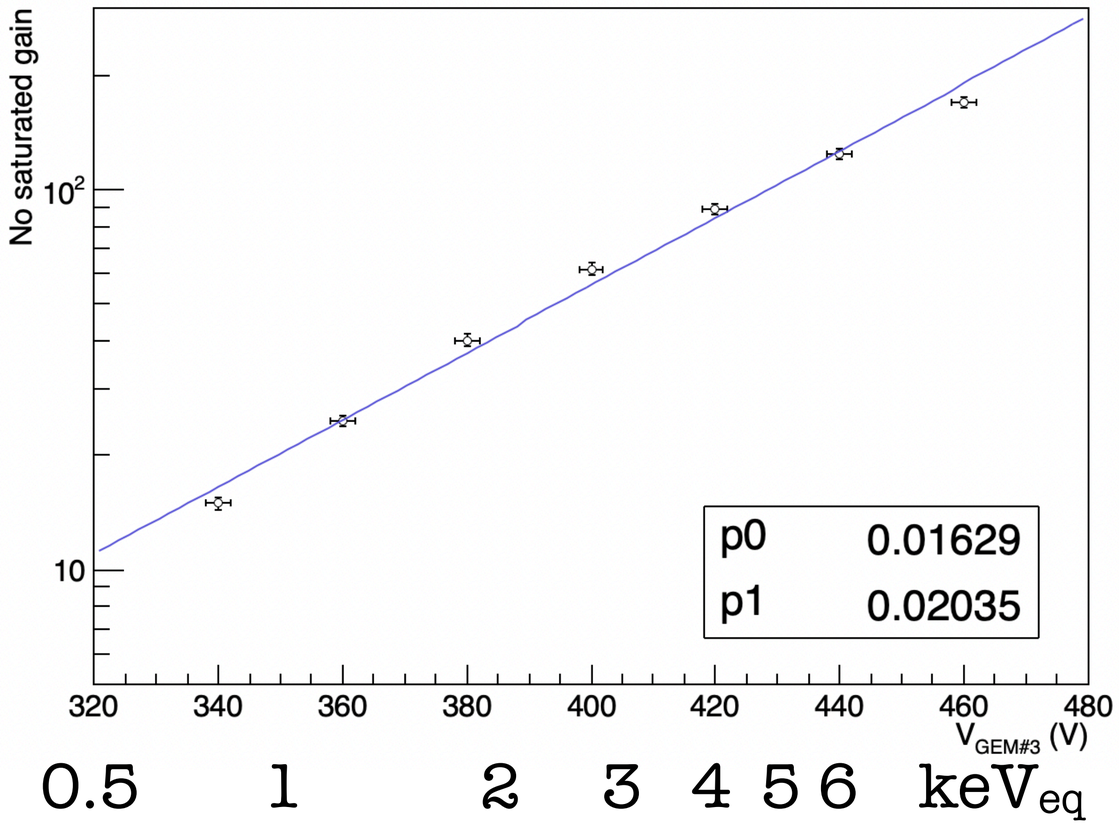
NEWS

22 April 2021

LIME study

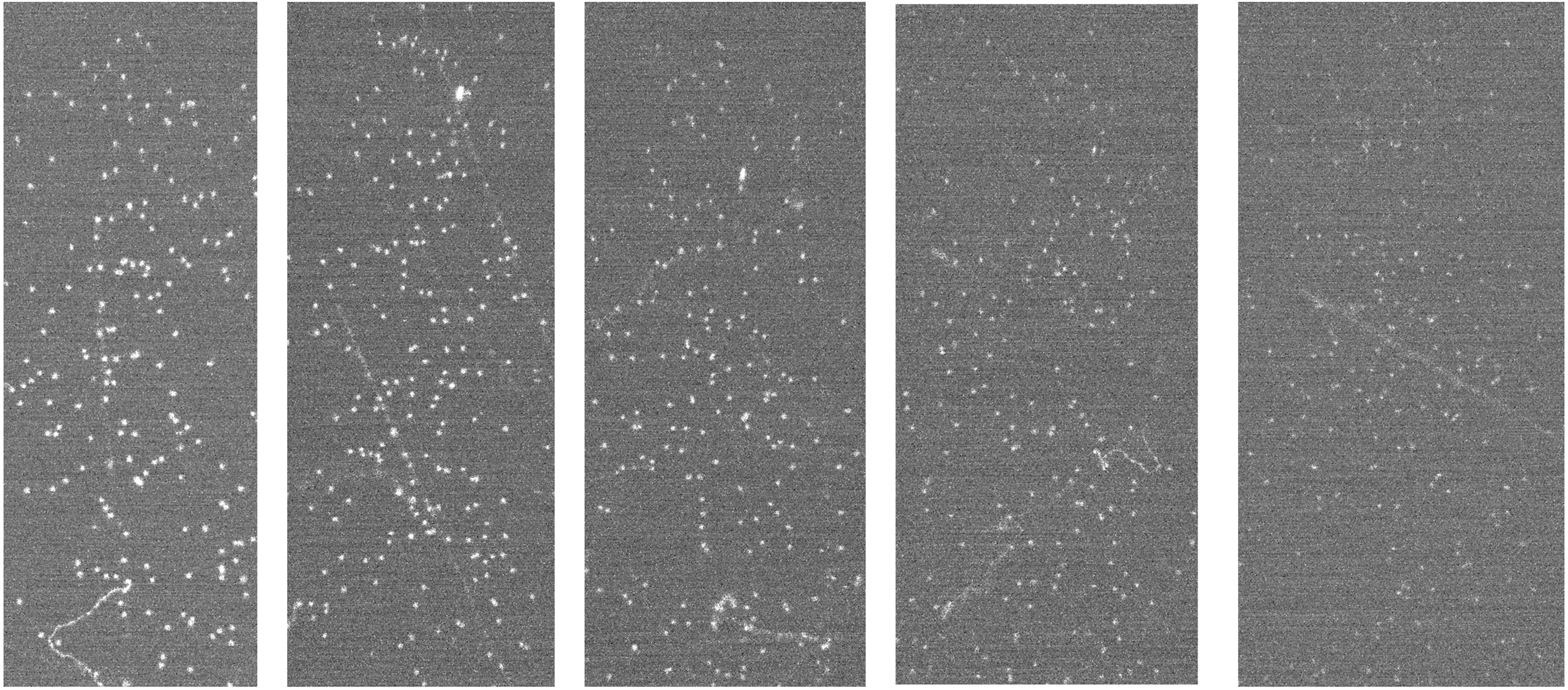


To study the response of LIME to very small signals (while waiting to understand how to produce X rays with energies below 6 keV) we decreased the gain of GEM#1 to simulate energy release of 5, 4, 3, 2, 1 and 0.5 keV;

We used the measurements performed by Karolina and Francesco (that contains the extraction efficiency)

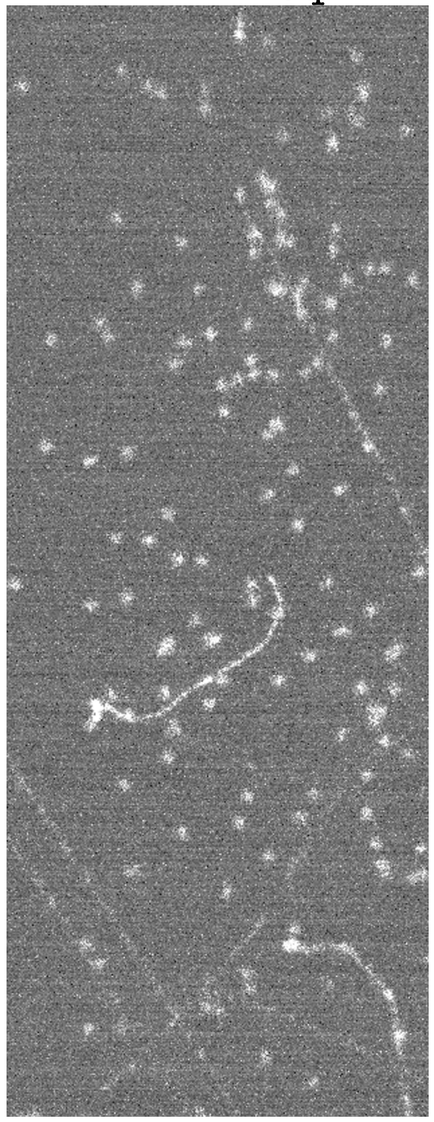
5 cm from the GEM

6 keV_{eq} 4 keV_{eq} 2 keV_{eq} 1 keV_{eq} 0.5 keV_{eq}

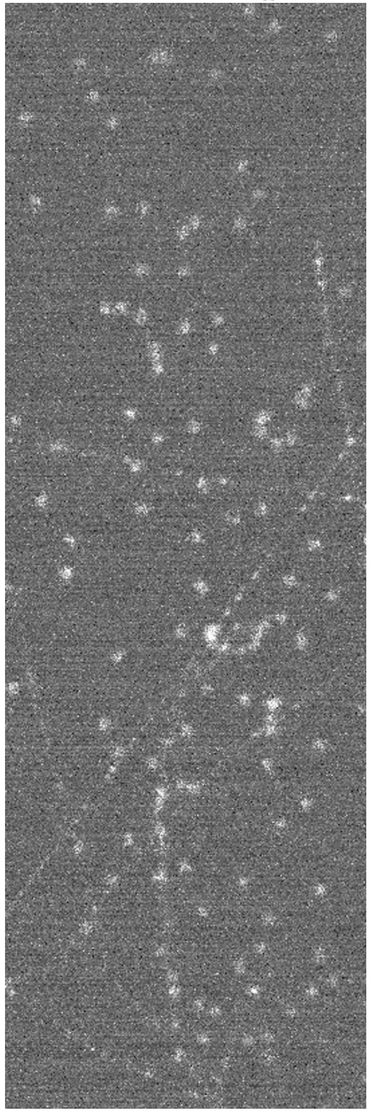


45 cm from the GEM

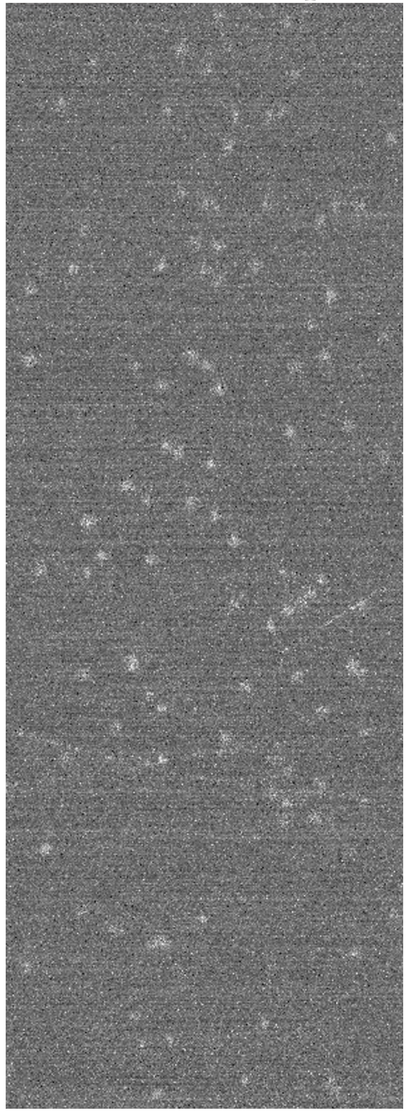
6 keV_{eq}



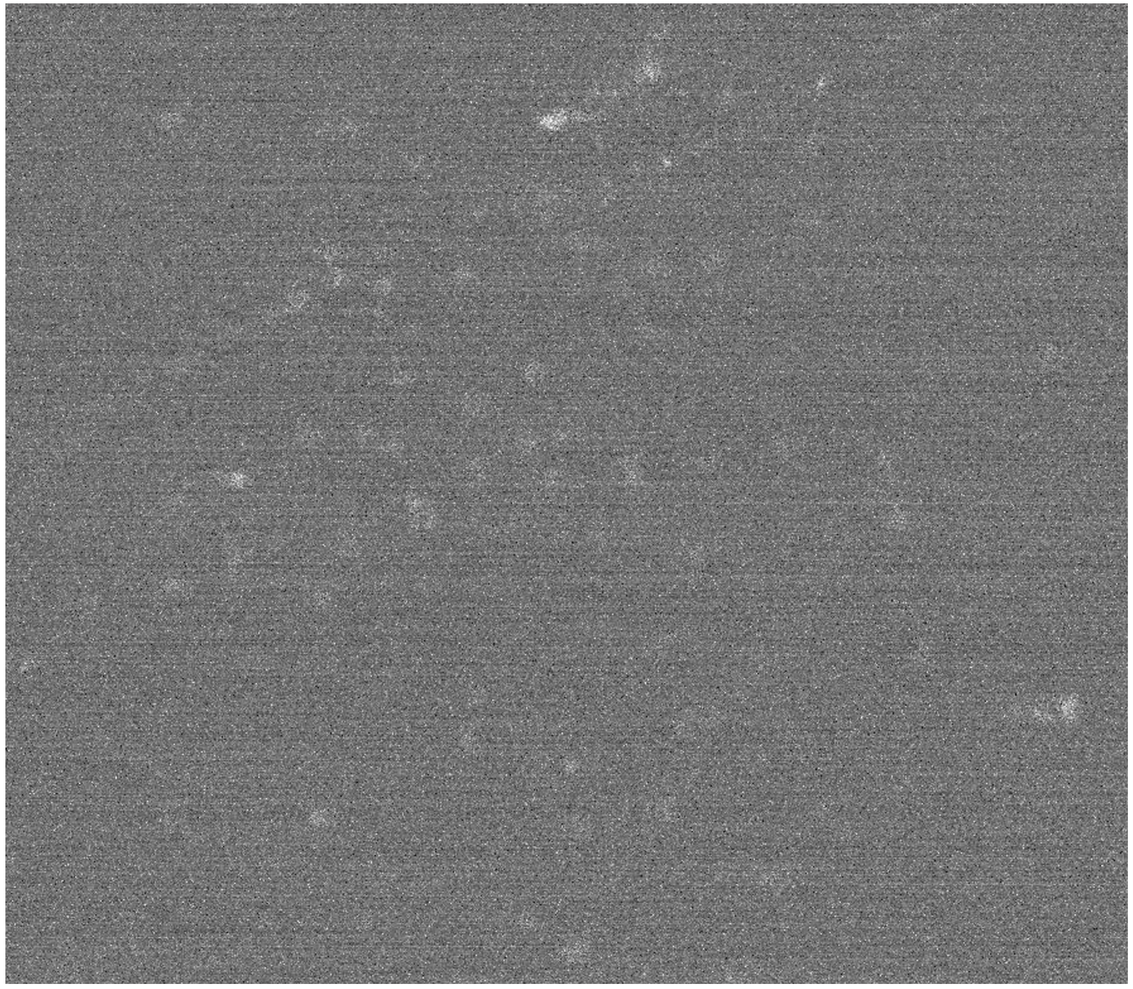
4 keV_{eq}



2 keV_{eq}



0.5 keV_{eq}

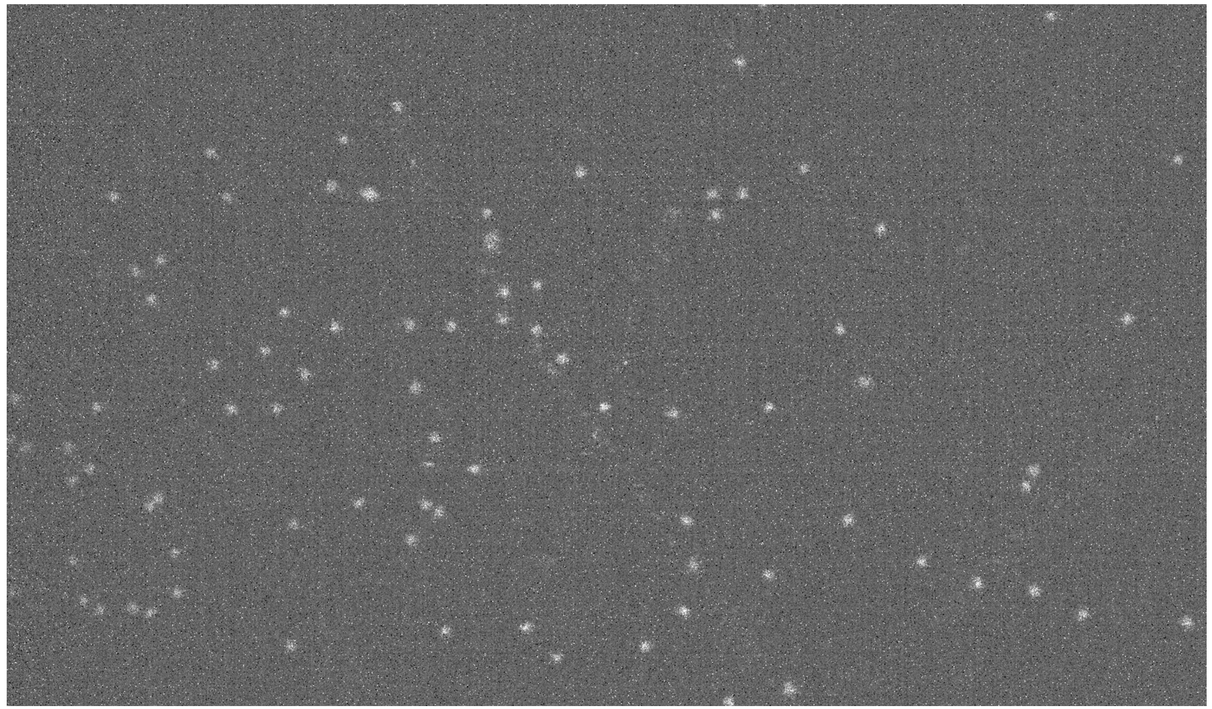


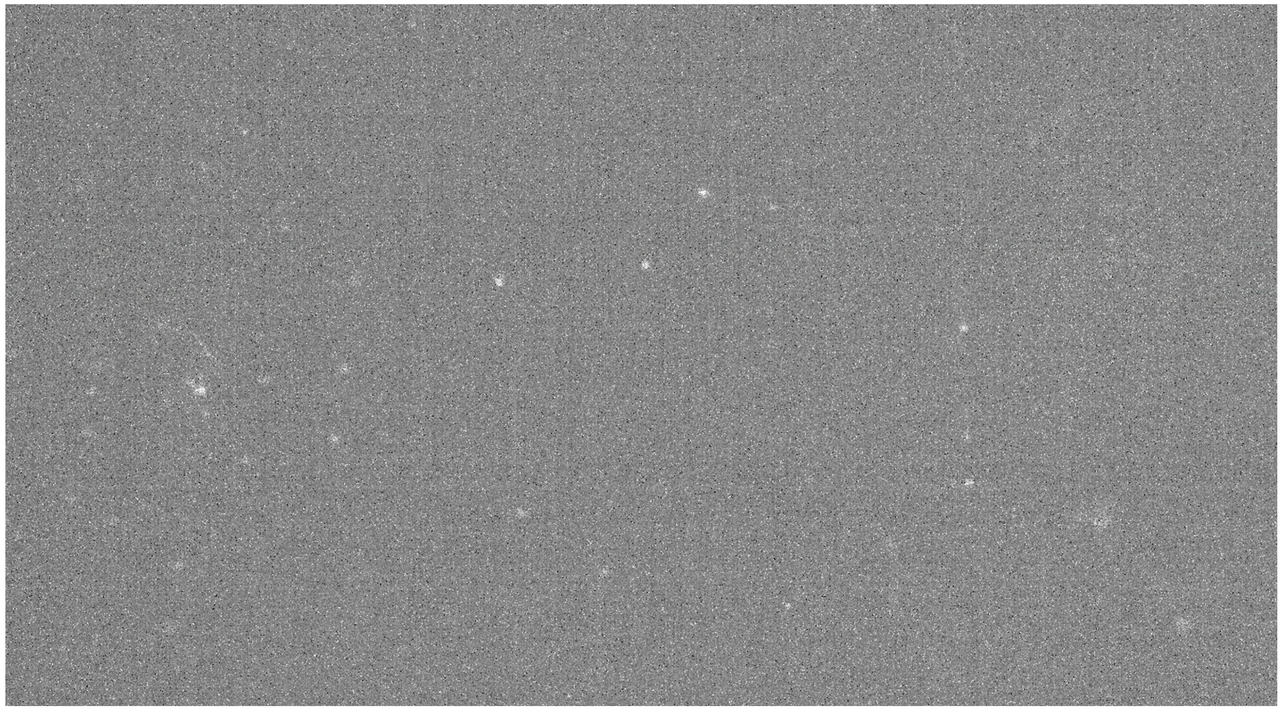
No null efficiency

He/CF_4 (60/40)

Ar/CF_4 (80/20)

4 cm from the GEM





We tested Ar/CF_4 in LEMON:

- From the comparison, at the maximum stable voltage, Ar/CF_4 seems to have lower light yield.

- LEMON is in general less luminous than expected. Time to retire?

- Just another try to induce electroluminescence with the ITO glass