

CHARACTERIZATION OF A LOW-PRESSURE MICROMEGLAS-LIKE GASEOUS DETECTOR WITH LOW ENERGY X-RAY SOURCES

C. AVANZINI^a, G. BALESTRI^a, R. CAROSI^a, R. DELL'ORSO^a, F. FRASCONI^a, C. MAGAZZU'^a, M. MASSA^a, A. MOGGI^a, F. MORSANI^a, F. PILO^a, G. TERRENI^a

^a SWEATERS TEAM, INFN Pisa, CSN5

- We have evaluated the possibility to use the Micro-Megas (MM) technology to detect low energy (below 100 keV) ionizing particles.
- The intrinsic characteristics of the MM device are promising for the construction of an instrument to be operated as a TPC gas chamber in a low-pressure regime, capable to reconstruct the incoming particles track.
- Here we present the main properties of a low-pressure bulk MM detector. Two configurations with a 128 μm and a 192 μm gap were studied, both filled and operated with a gas mixture (Ar-CO₂ ; 93: 7) at pressures below 100 mbar.
- Using a specifically developed test bench, the dependence of the gain, the energy resolution, the mesh transparency on the amplification field, gas pressure and drift field have been evaluated.
- The reliability of the measured performance, make it an attractive choice for applications where track length of low energy particles is detected by using a low-pressure filling gas.

