

# Internal background status

Simulation meeting

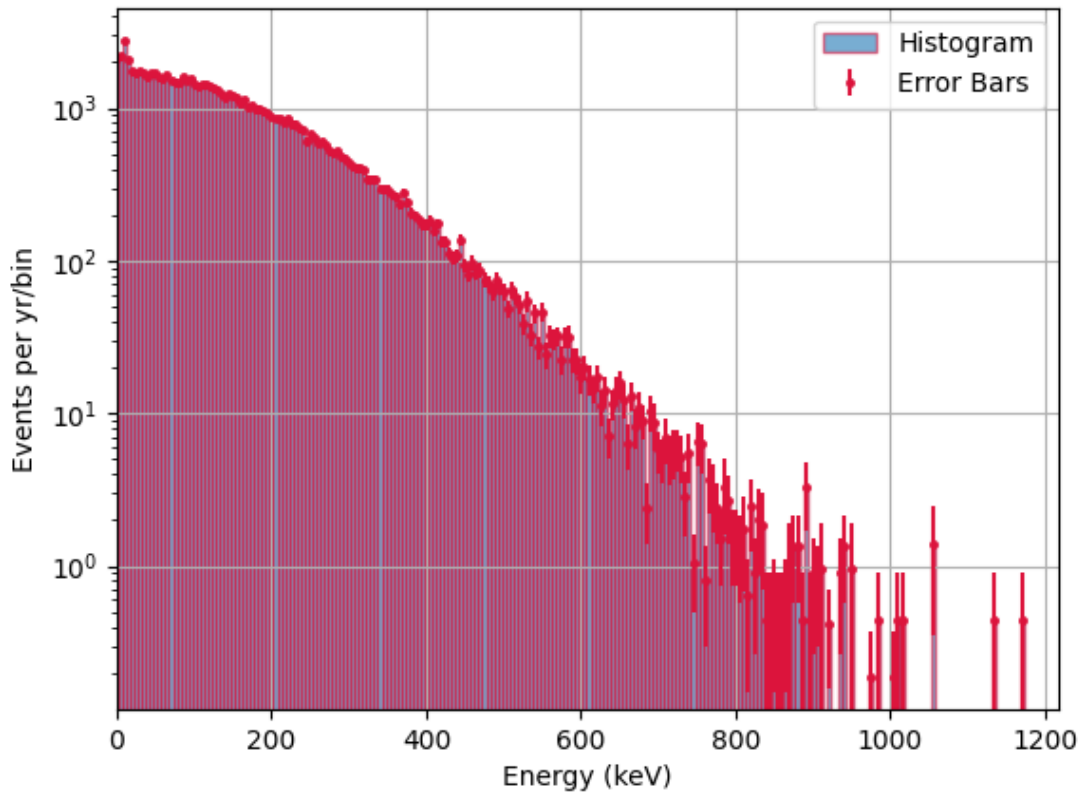
Melba D'Astolfo, 29/07/2024

# GEM - TREX reference



0.2695925 kg

EnergyDep in All Parts



ISOTOPE	ACTIVITY [Bq/kg]
$^{238}\text{U}$	1.32E-02
$^{232}\text{Th}$	5.45E-03
$^{235}\text{U}$	2.80E-02
$^{40}\text{K}$	6.31E-02
$^{137}\text{Cs}$	1.56E-03
$^{60}\text{Co}$	2.34E-04



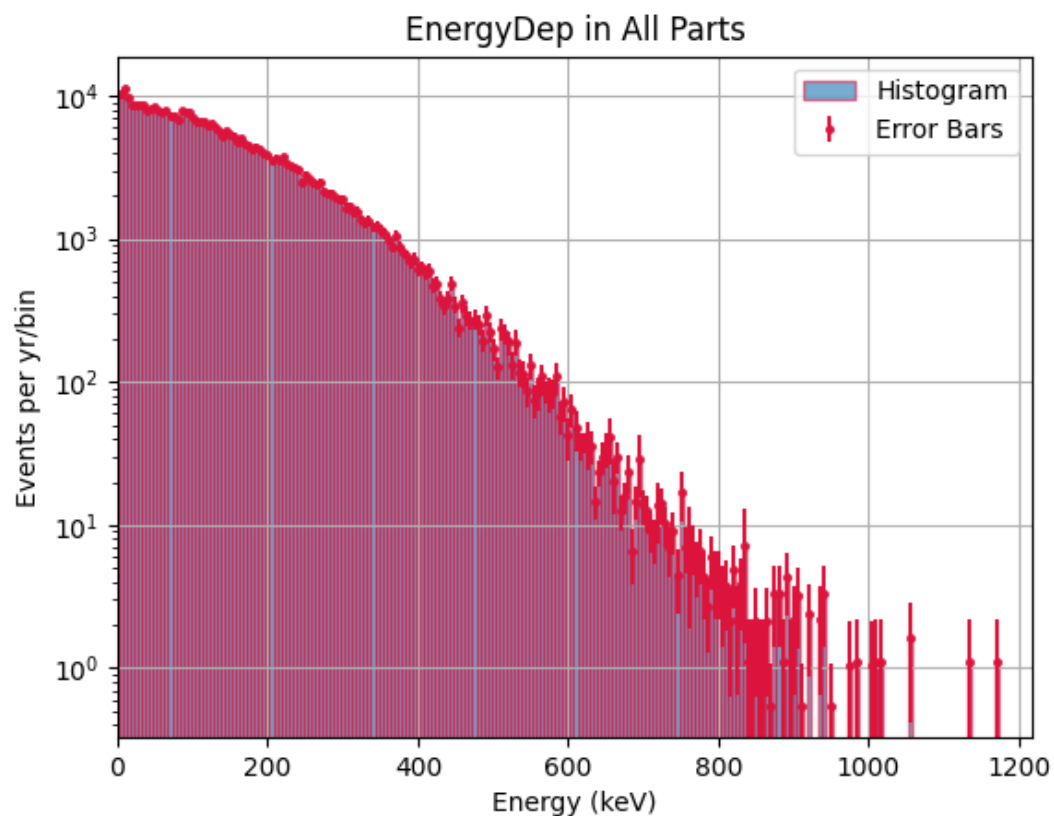
Radioactivity evaluated only for one side

Total Rate for events within the energy interval [1, 20] keV from all detectors:  $44685 \pm 529$  events per year

# GEM - LNGS reference



0.2695925 kg



ISOTOPE	ACTIVITY [Bq/kg]
$^{238}\text{U}_{top}$	1.63E-01
$^{238}\text{U}_{bottom}$	3.25E-02
$^{235}\text{U}$	1.58E-02
$^{232}\text{Th}$	3.09E-02
$^{40}\text{K}$	3.58E-01
$^{137}\text{Cs}$	8.13E-03
$^{60}\text{Co}$	7.48E-03



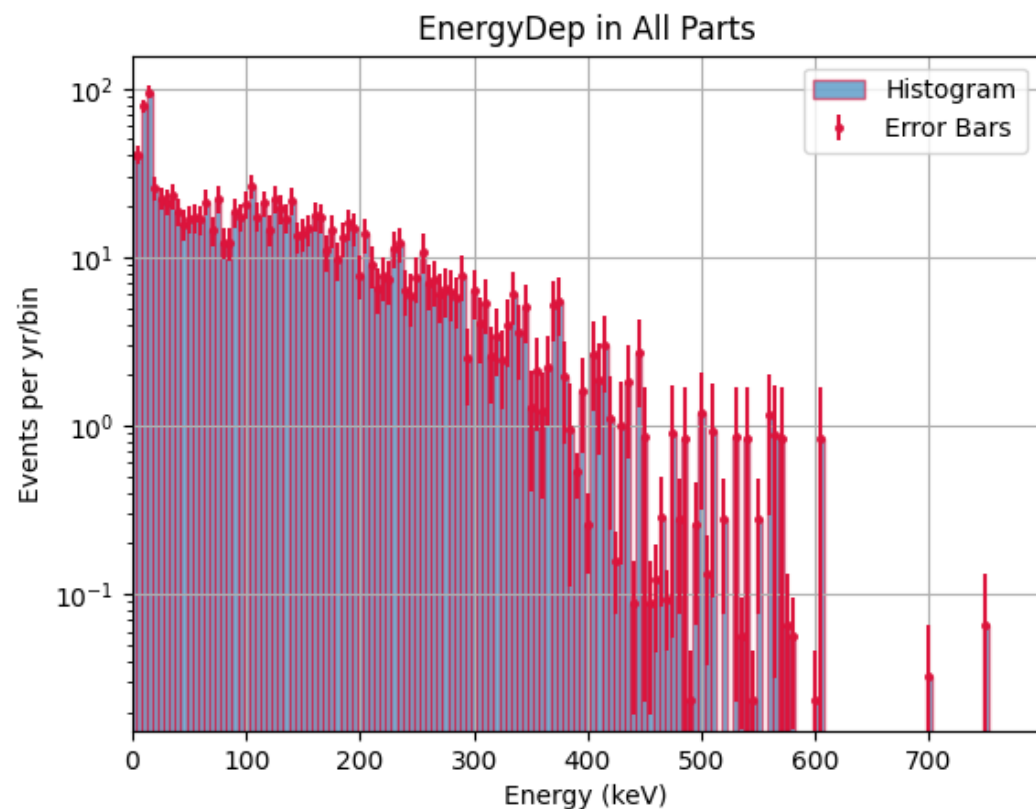
Radioactivity evaluated only for one side

Total Rate for events within the energy interval [1, 20] keV from all detectors:  $199891 \pm 2833$  events per year

# GEM FRAME - PMMA LNGS reference



3.69739 kg



ISOTOPE	ACTIVITY [Bq/kg]
$^{238}\text{U}_{top}$	1.80E-03
$^{238}\text{U}_{bottom}$	5.00E-05
$^{235}\text{U}$	7.00E-05
$^{232}\text{Th}$	1.40E-04
$^{40}\text{K}$	4.00E-04
$^{137}\text{Cs}$	2.50E-05



Radioactivity evaluated only for one side

Total Rate for events within the energy interval [1, 20] keV from all detectors:  $1226 \pm 60$  events per year

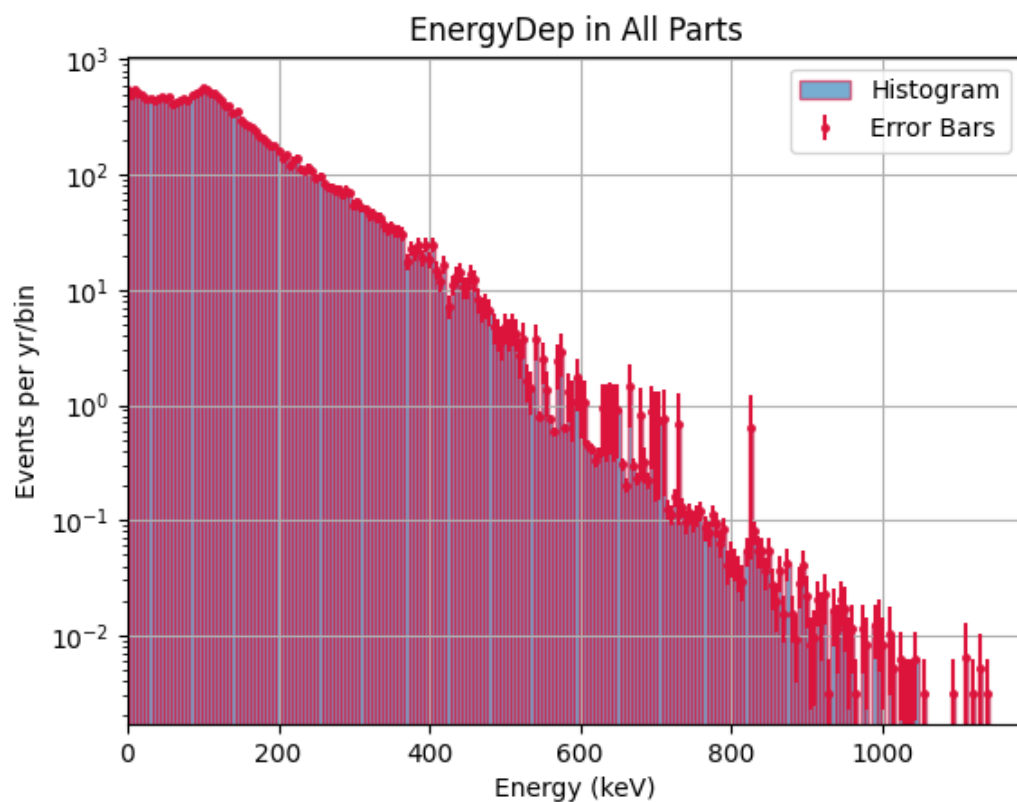
# CATHODE - SCHRIEBER reference



0.244389 kg



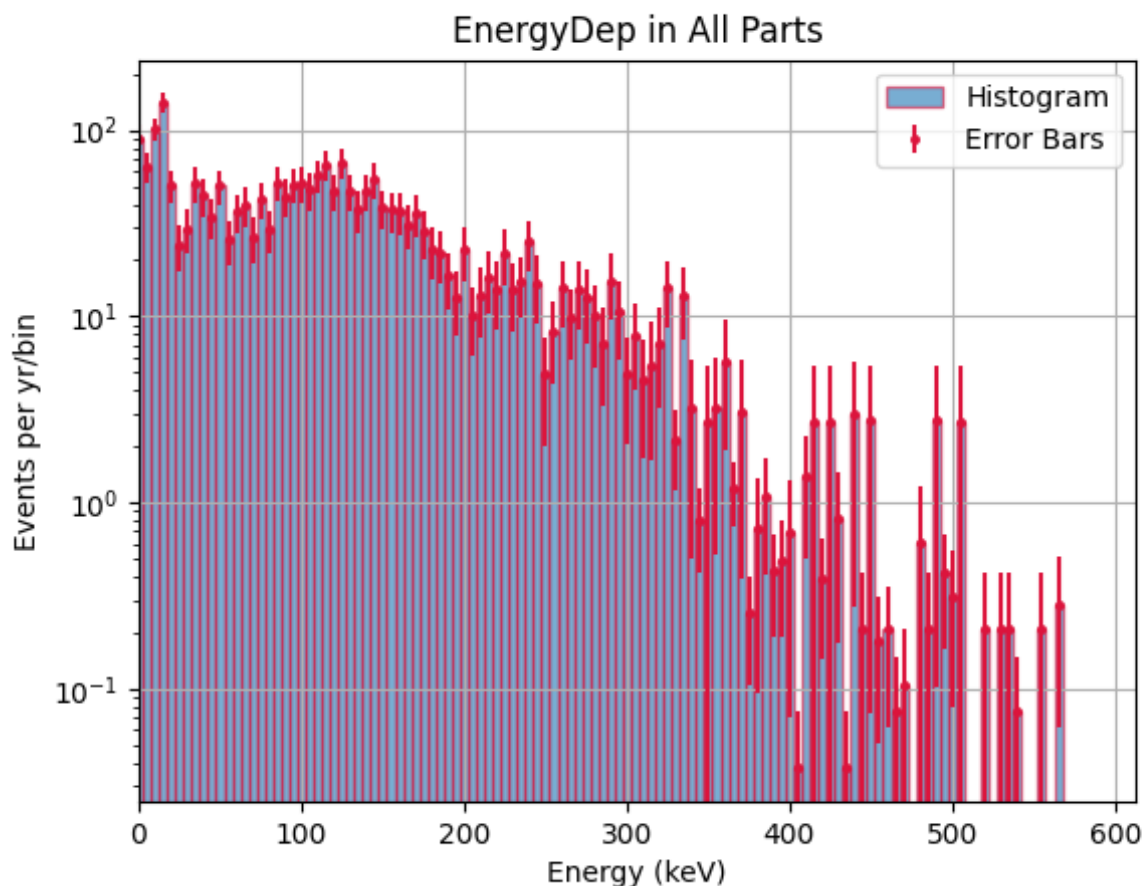
X = 620 mm Y = 0.05 mm Z = 880 mm



ISOTOPE	ACTIVITY
$^{238}\text{U}_{top}$	1.90E-02
$^{238}\text{U}_{bottom}$	1.00E-04
$^{235}\text{U}$	2.10E-04
$^{232}\text{Th}$	1.70E-04
$^{40}\text{K}$	6.80E-04
$^{137}\text{Cs}$	1.10E-04
$^{60}\text{Co}$	3.10E-05

Total Rate for events within the energy interval [1, 20] keV from all detectors:  $10233 \pm 170$  events per year

# CATHODE FRAME - PMMA LNGS reference 2.36559 kg



ISOTOPE	ACTIVITY [Bq/kg]
$^{238}\text{U}_{top}$	1.80E-03
$^{238}\text{U}_{bottom}$	5.00E-05
$^{235}\text{U}$	7.00E-05
$^{232}\text{Th}$	1.40E-04
$^{40}\text{K}$	4.00E-04
$^{137}\text{Cs}$	2.50E-05

Total Rate for events within the energy interval [1, 20] keV from all detectors:  $1783 \pm 132$  events per year