

Internal background status

Simulation meeting

Melba D'Astolfo, 23/09/2024

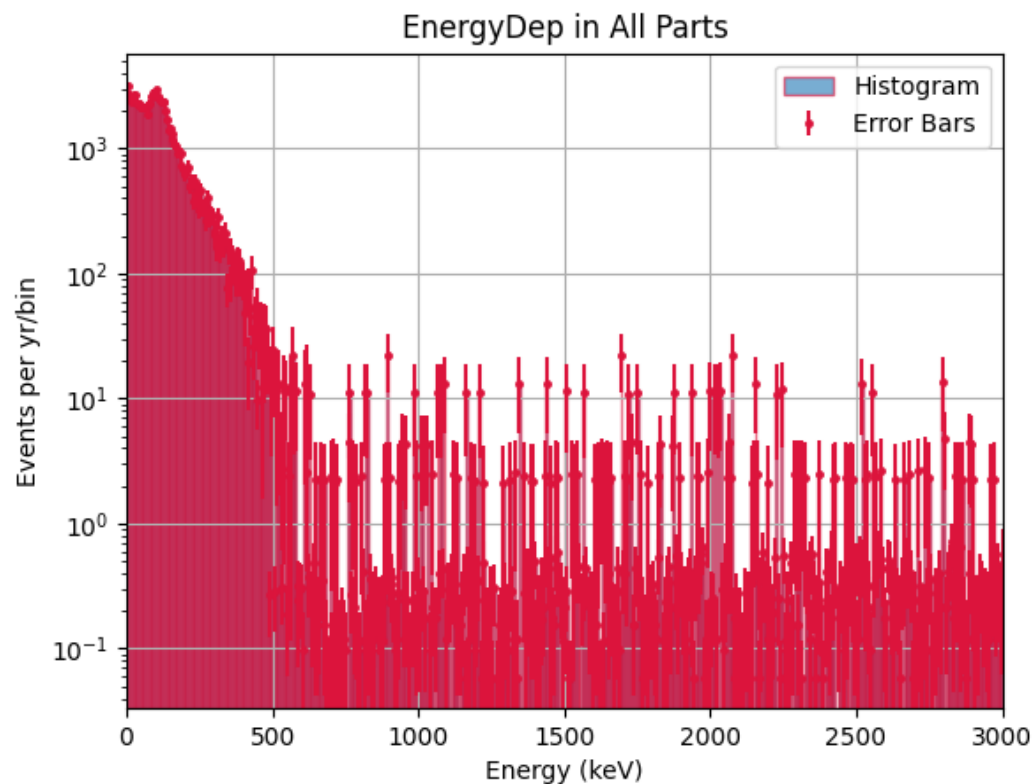
CATHODE - SCHRIEBER reference



9.10604 kg



X = 2.5 mm Y = 620 mm Z = 880 mm



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

Total Rate for events within the energy interval [1, 20] keV from all detectors: 54080 ± 1550 events per year

Total Rate for NR events within the energy interval [1, 20] keV from all detectors: 155 ± 58 events per year

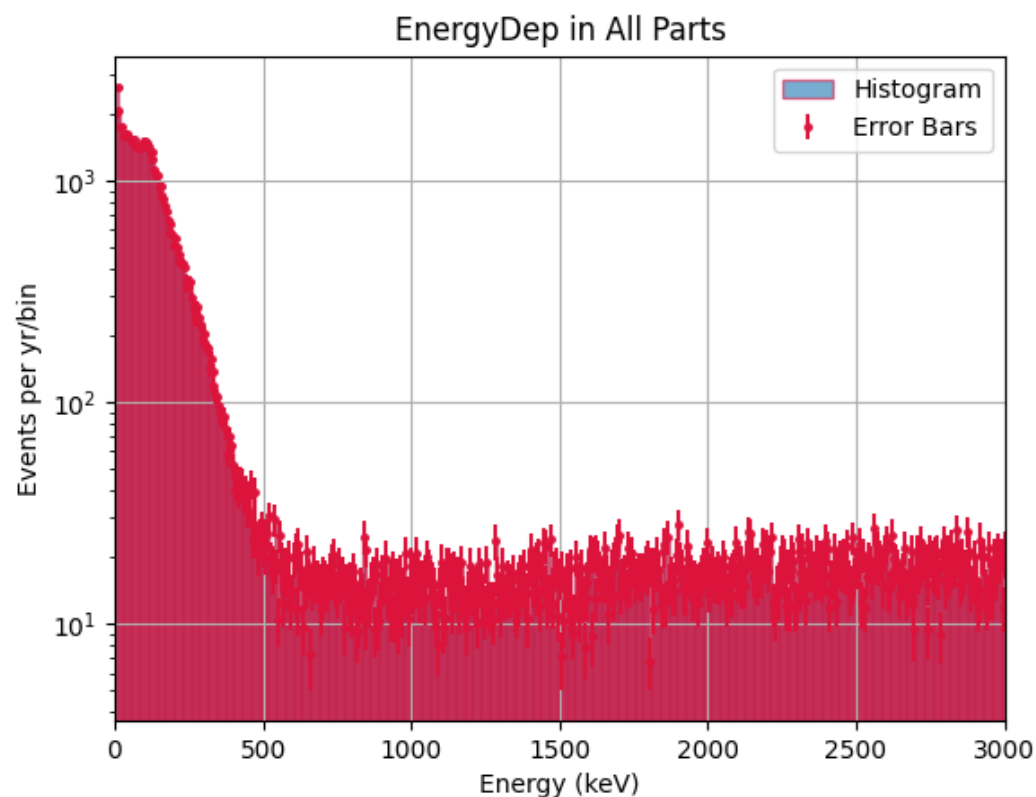
CATHODE - GEM TREX



X = 0.06 mm Y = 800 mm Z = 500 mm



0.05136 kg



ISOTOPE	ACTIVITY
^{238}U	1.32E-02
^{232}Th	5.45E-03
^{235}U	2.80E-02
^{40}K	6.31E-02
^{60}Co	2.34E-03
^{137}Cs	1.56E-03

Total Rate for events within the energy interval [1, 20] keV from all detectors: 42522 ± 455 events per year

Total Rate for NR events within the energy interval [1, 20] keV from all detectors: 1017 ± 59 events per year

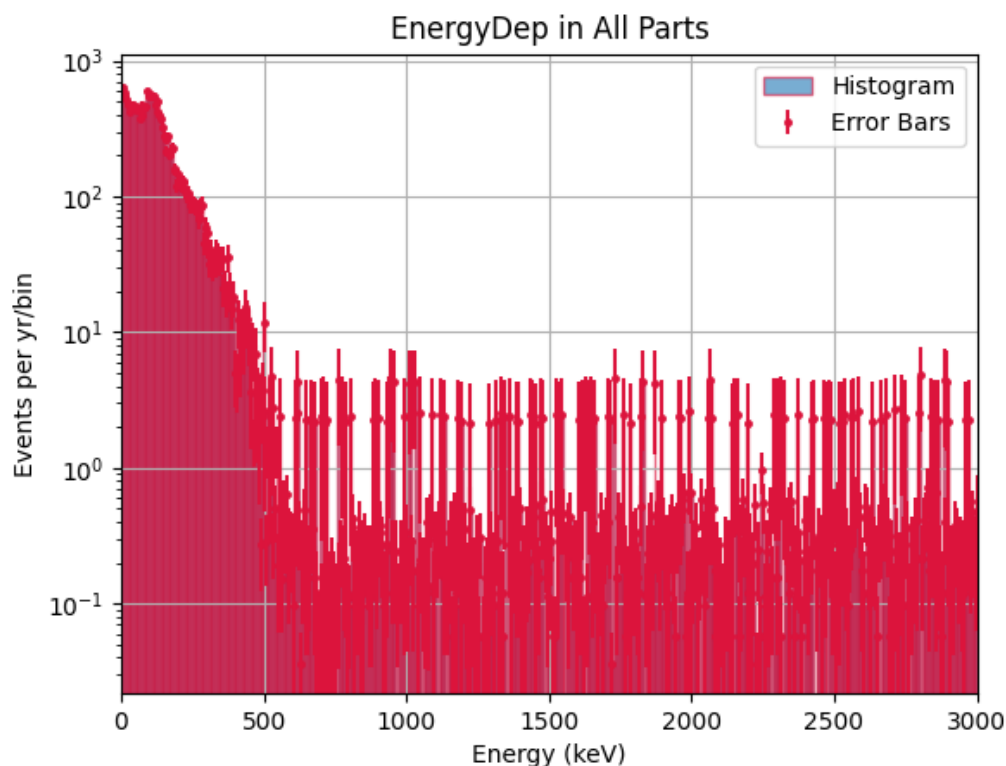
CATHODE - SCHRIEBER reference



9.10604 kg



X = 2.5 mm Y = 620 mm Z = 880 mm



ISOTOPE	ACTIVITY
$^{238}\text{U}_{top}$	6.20E-05
$^{238}\text{U}_{medium}$	3.70E-03
$^{238}\text{U}_{bottom}$	1.00E-04
^{235}U	2.10E-04
^{232}Th	1.70E-04
^{40}K	6.80E-04
^{137}Cs	1.10E-04
^{60}Co	3.10E-05

Total Rate for events within the energy interval [1, 20] keV from all detectors: 11563 ± 302 events per year

Total Rate for NR events within the energy interval [1, 20] keV from all detectors: 46 ± 17 events per year

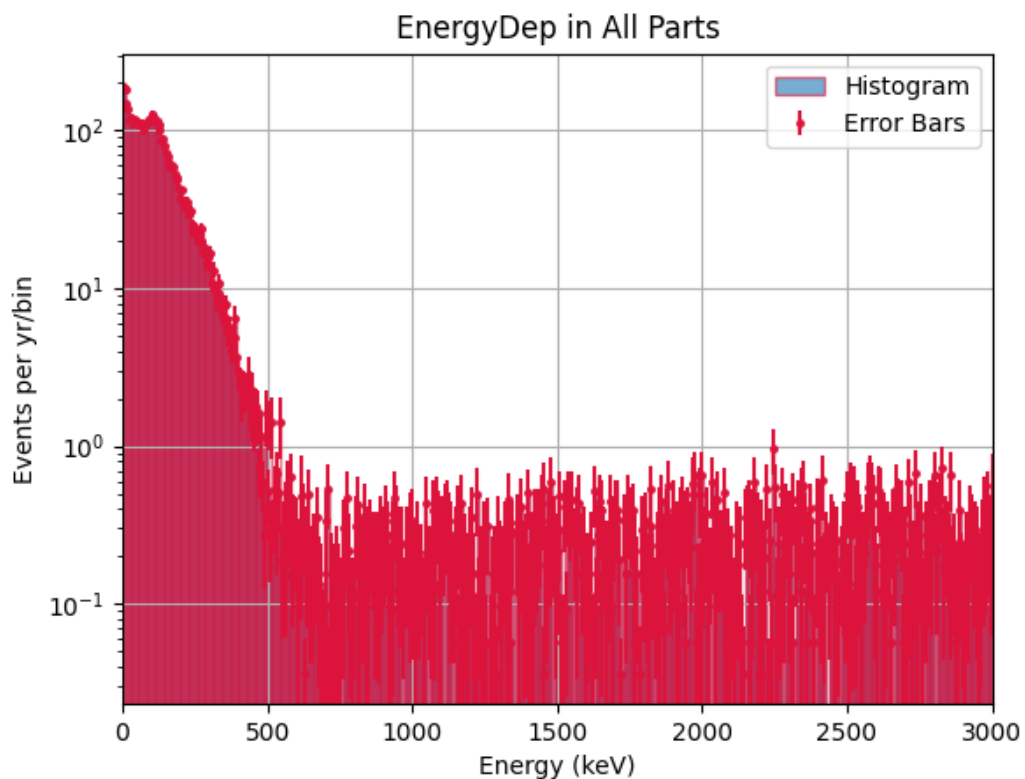
CATHODE - SCHRIEBER reference



9.10604 kg



X = 2.5 mm Y = 620 mm Z = 880 mm



ISOTOPE	ACTIVITY
$^{238}\text{U}_{top}$	6.20E-05
$^{238}\text{U}_{bottom}$	1.00E-04
^{235}U	2.10E-04
^{232}Th	1.70E-04
^{40}K	6.80E-04
^{137}Cs	1.10E-04
^{60}Co	3.10E-05

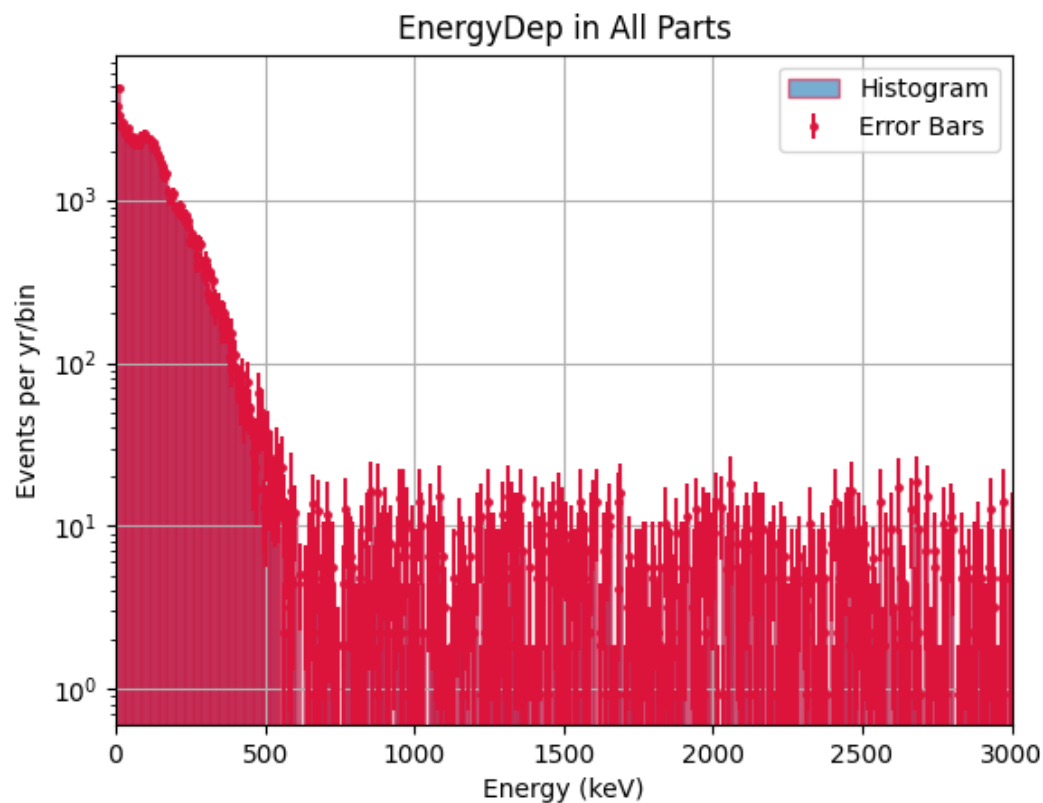
Total Rate for events within the energy interval [1, 20] keV from all detectors: 3385 ± 57 events per year

Total Rate for NR events within the energy interval [1, 20] keV from all detectors: 15 ± 3 events per year

GEM - TREX reference



0.2687825 kg



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



Radioactivity evaluated only for one side

Total Rate for events within the energy interval [1, 20] keV from all detectors: 74634 ± 1406 events per year

Total Rate for NR events within the energy interval [1, 20] keV from all detectors: 447 ± 93 events per year