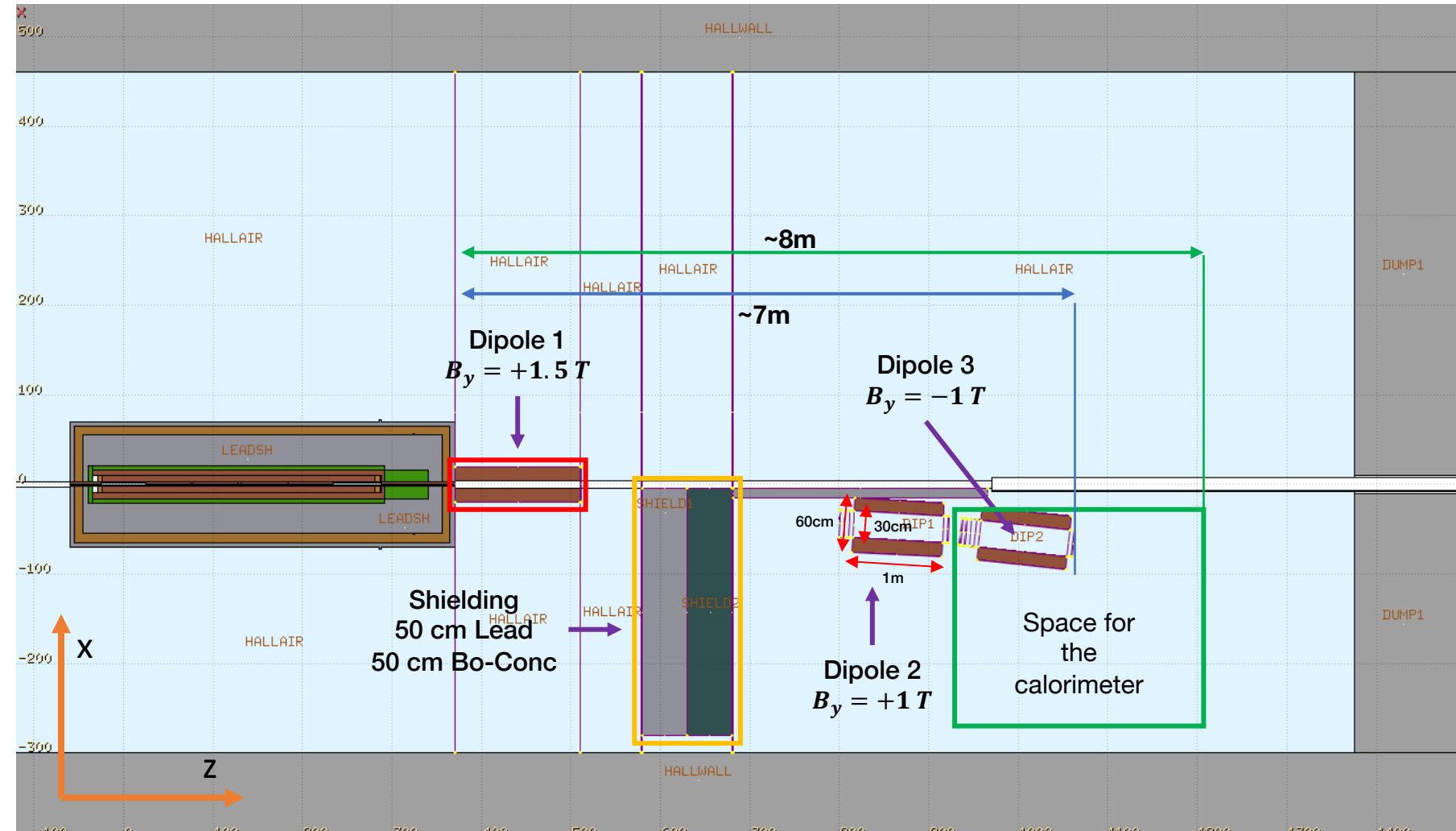


# Old geometry



## ➤ The setup use $\sim 7\text{ m}$

- Need of another  $\sim 1\text{ m}$  after the dipole to accommodate a calorimeter
- The space can be reduced using a setup similar to M3 & a stronger initial magnet
  - Only 2 dipole (1 & 2)
  - Initial tracker & target inside the dipole

## ➤ Dipole 1

- Bend muons out of the beamline
- Outer dimensions:  $40 \times 40 \times 140\text{ cm}$
- Inner dimensions:  $8.8 \times 27 \times 140\text{ cm}$
- Field:  $B_y = +1.5\text{ T}$

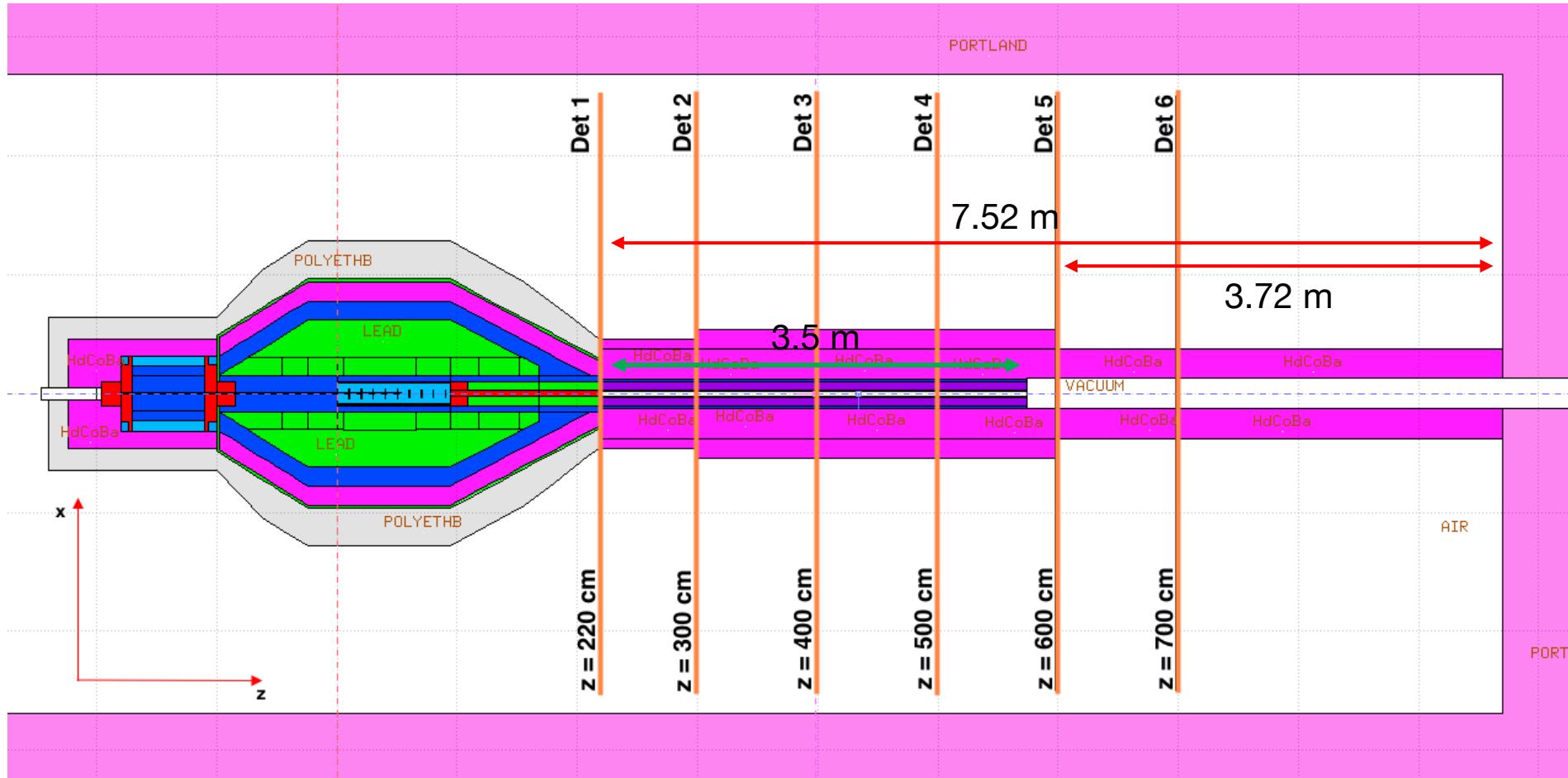
## ➤ Dipole 2 & 3

- Measure muons' momentum
- Outer dimensions:  $60 \times 60 \times 100\text{ cm}$
- Inner dimensions:  $30 \times 30 \times 100\text{ cm}$
- Field:  $B_y = \pm 1.0\text{ T}$

## ➤ Shielding

- 50 cm thick Lead
- 50 cm thick Boron (30%) concrete
- 10 cm thick lead on the side

# New geometry



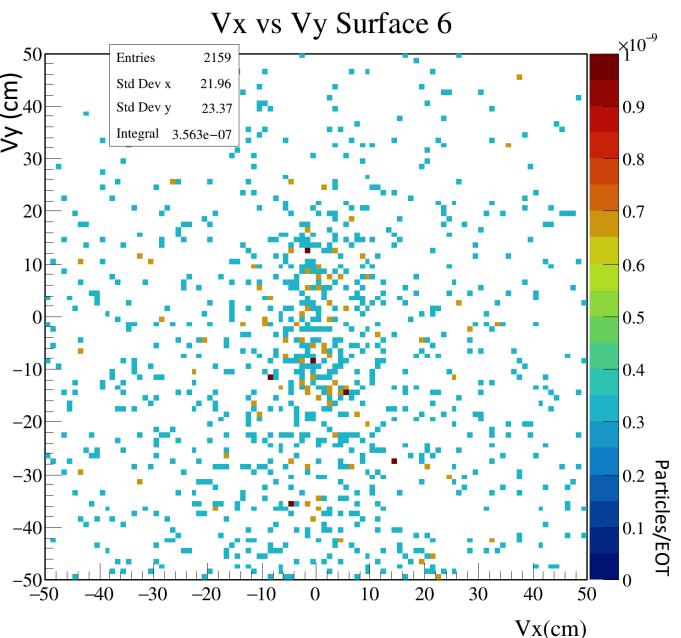
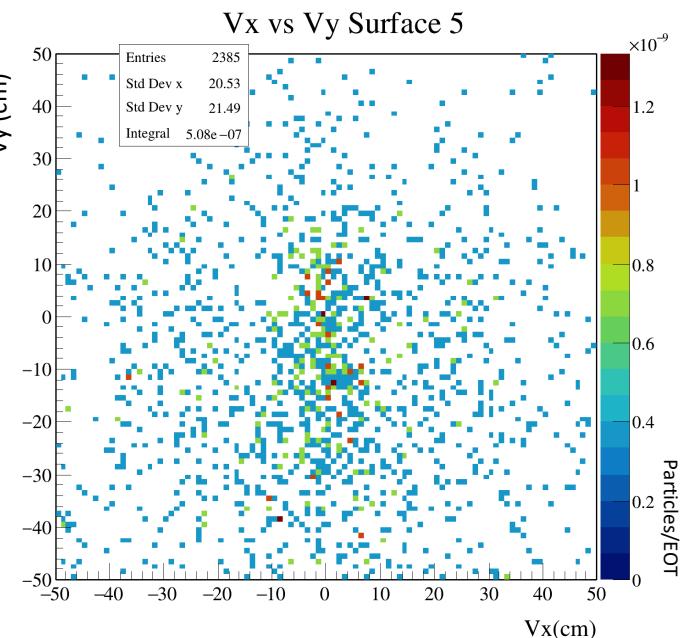
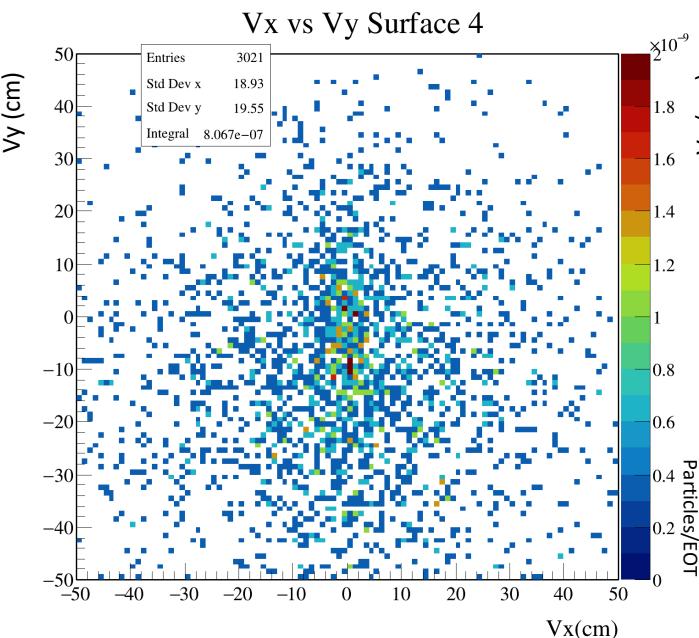
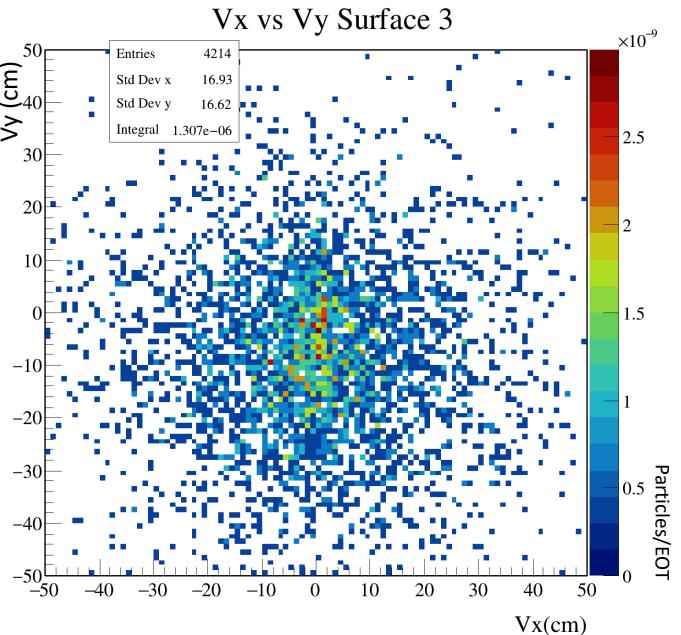
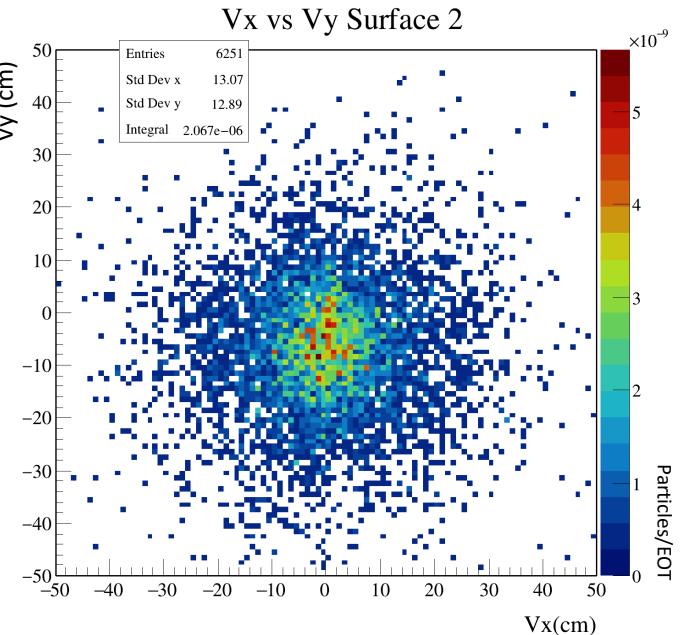
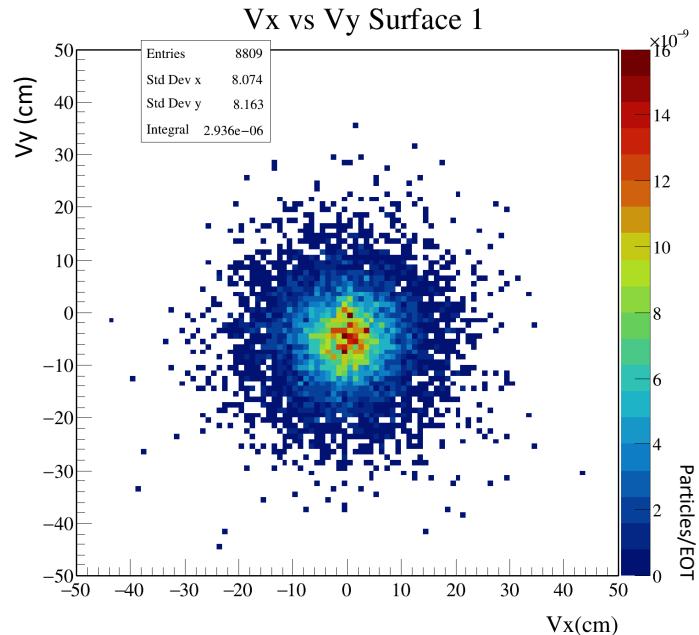
## ➤ Permanent magnet

- $B_x = +0.23 \text{ T}$  too weak to bend muons out of the beam line
- $6 \times 10 \text{ cm}$  aperture too small to capture all the muons

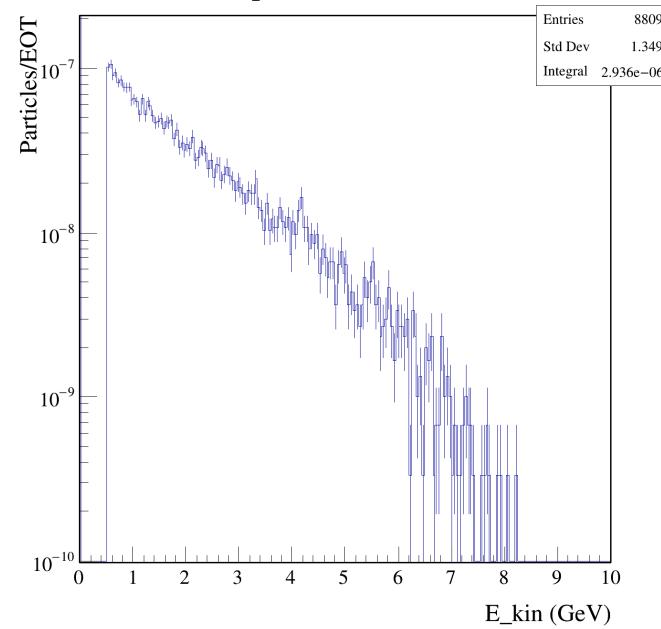
## ➤ Space

- Need of  $1/1.5 \text{ m}$  to fit a strong magnet to bend muons
- Need of another  $6/7 \text{ m}$  to fit the experimental setup

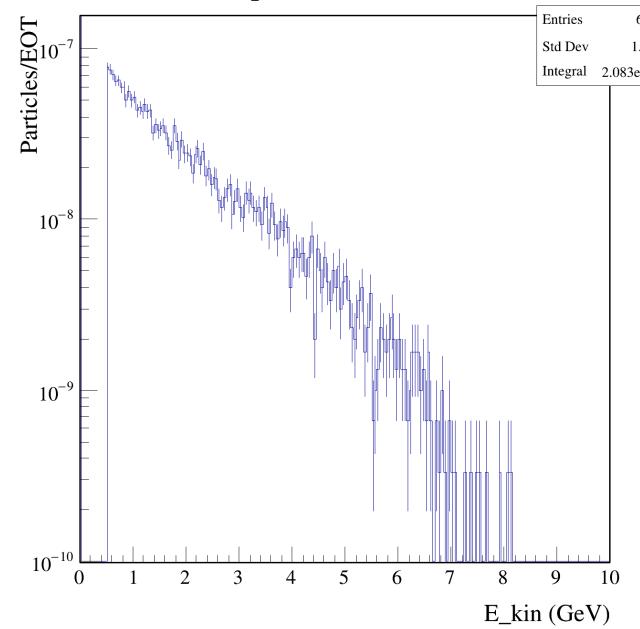
# Muons with $B_x = + 0.23\text{ T}$ permanent magnet



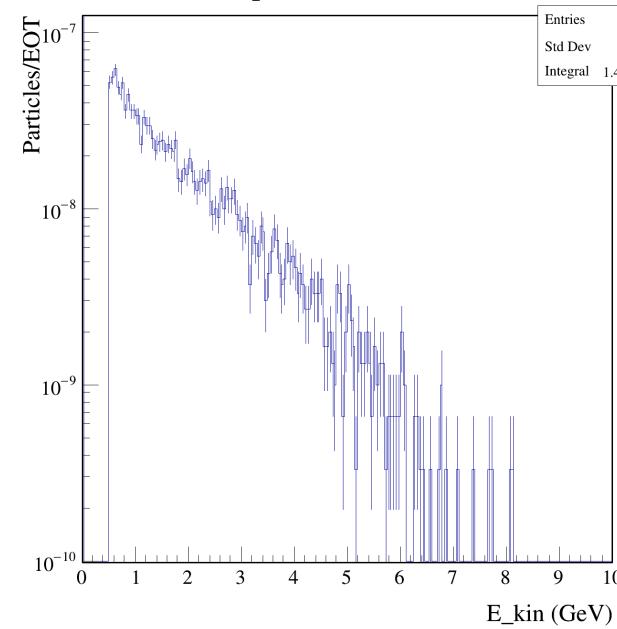
### Spectra Surface 1



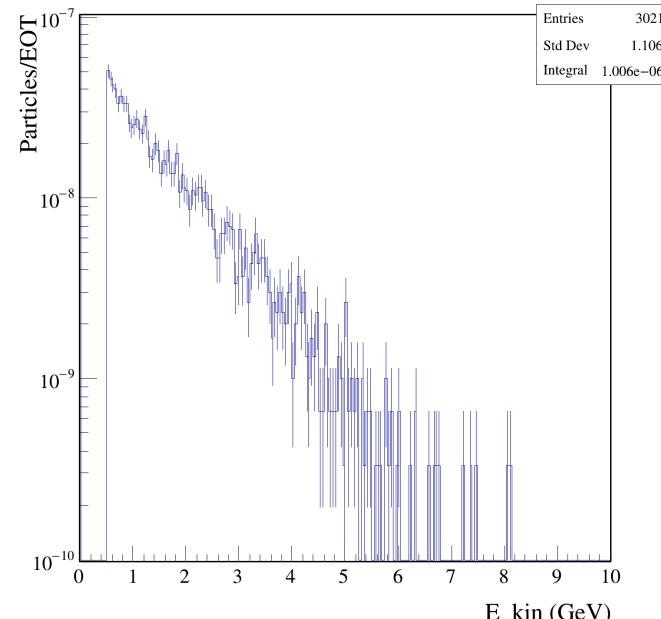
### Spectra Surface 2



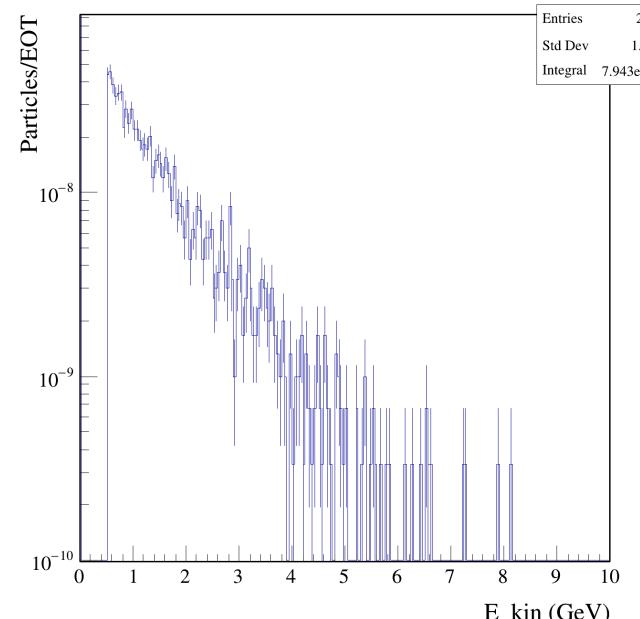
### Spectra Surface 3



### Spectra Surface 4



### Spectra Surface 5



### Spectra Surface 6

