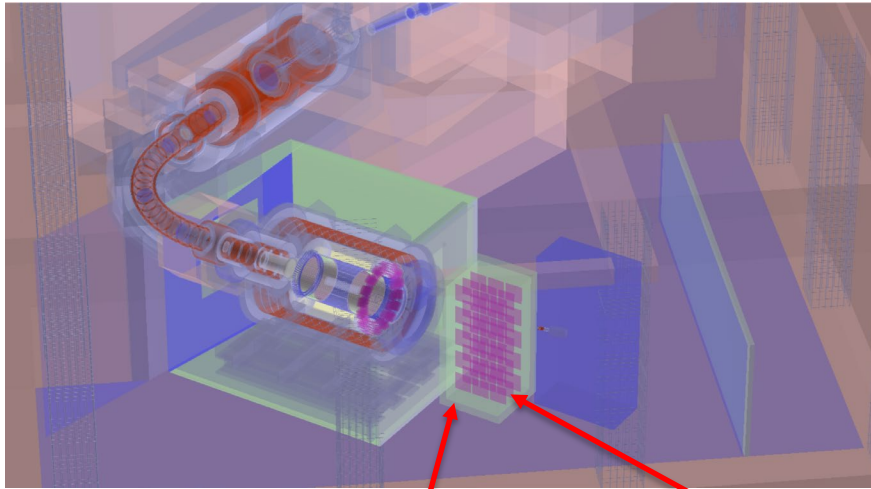


Radiation Dose and Neutron Flux on COMET Electronics

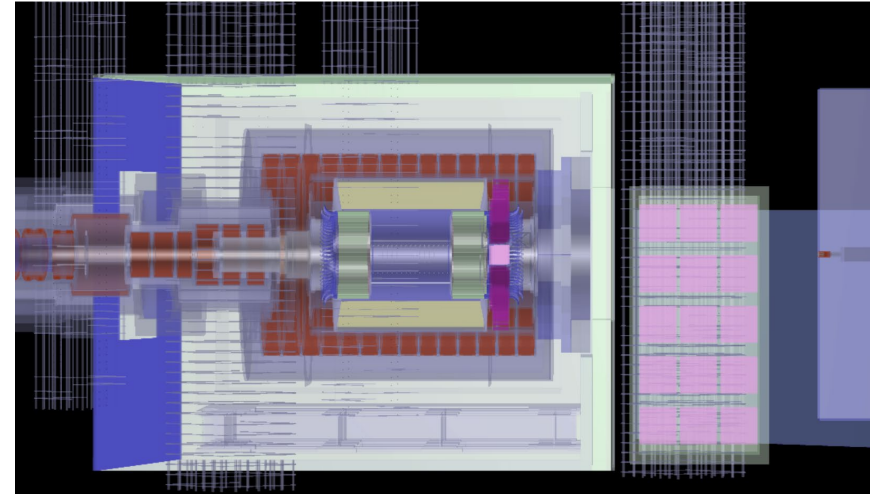
Presenter: Lai Gui

Supervisor: Prof. Yoshi Uchida;
Dr Yuki Fujii; Dr Kou Oishi

Geometry

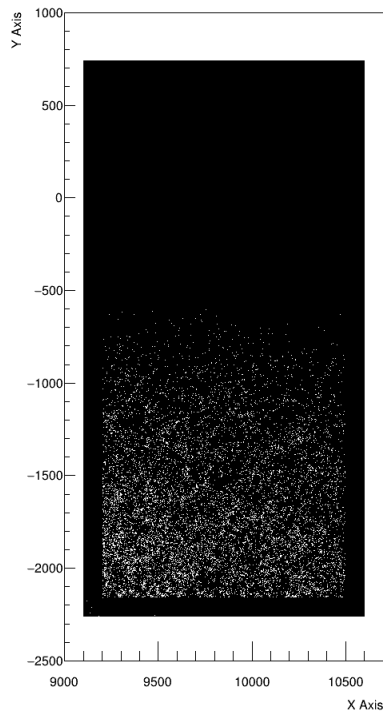


1.5 x 1.5 x 3 m
Polyethylene Shield of 0.1m thick

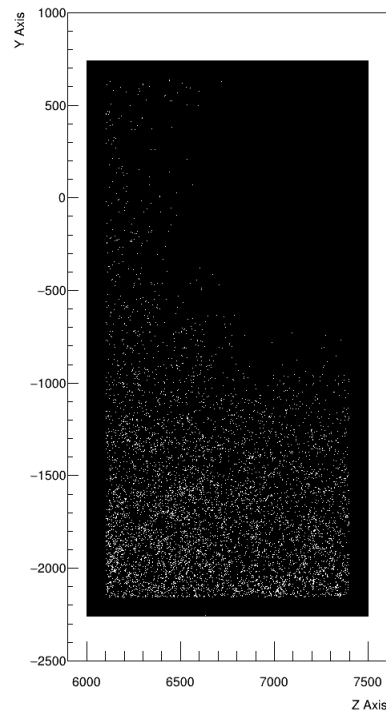


45x
400 x 400 x 1.6 mm
G10 Simple Electric Boards

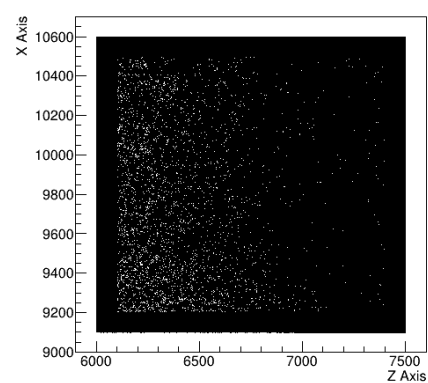
Shield x-y plane (8.202e7 POT events)



Shield z-y plane (8.202e7 POT events)

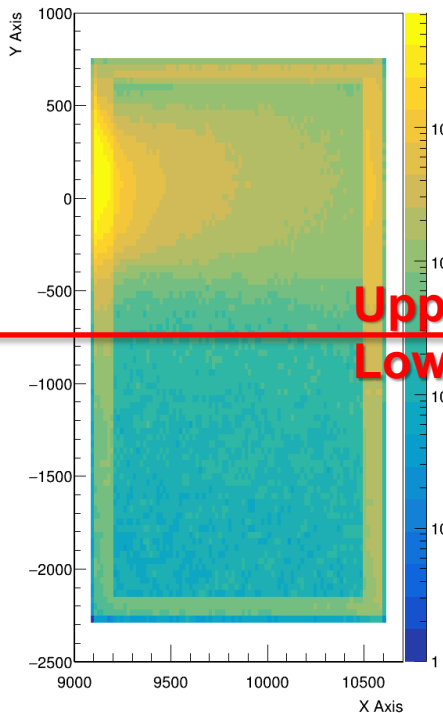


Shield z-x plane (8.202e7 POT events)

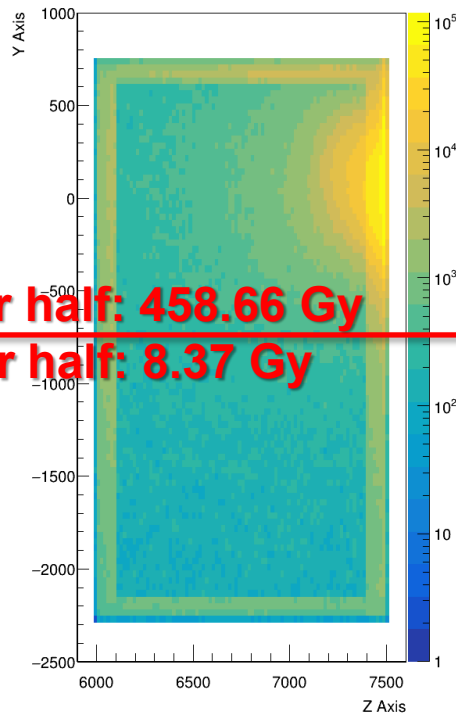


Overall Dose: 233 Gy

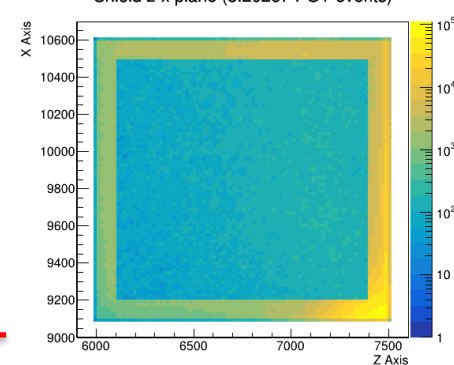
Shield x-y plane (8.202e7 POT events)



Shield z-y plane (8.202e7 POT events)



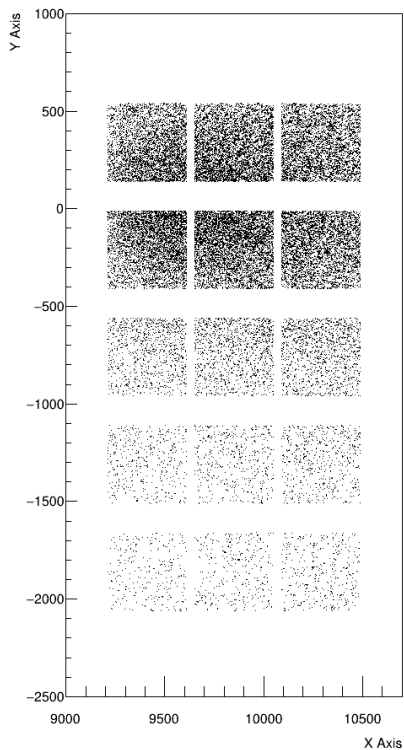
Shield z-x plane (8.202e7 POT events)



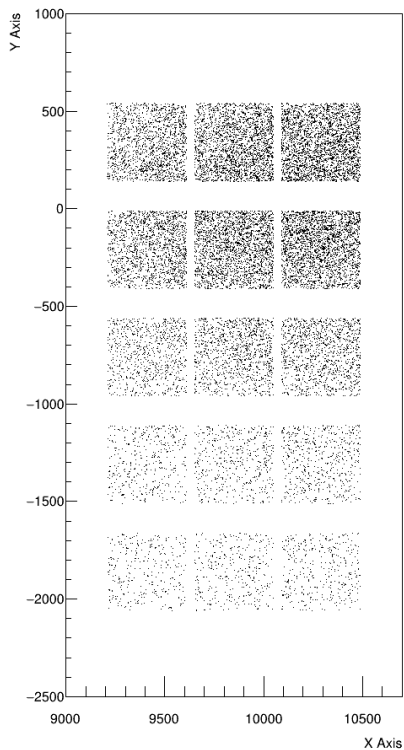
Upper half: 458.66 Gy
Lower half: 8.37 Gy

Simple Boards

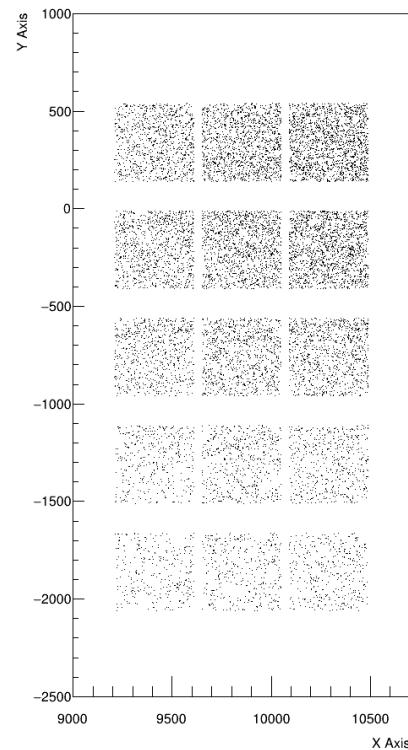
SimpleBoard_0 (8.202e7 POT events)



SimpleBoard_1 (8.202e7 POT events)

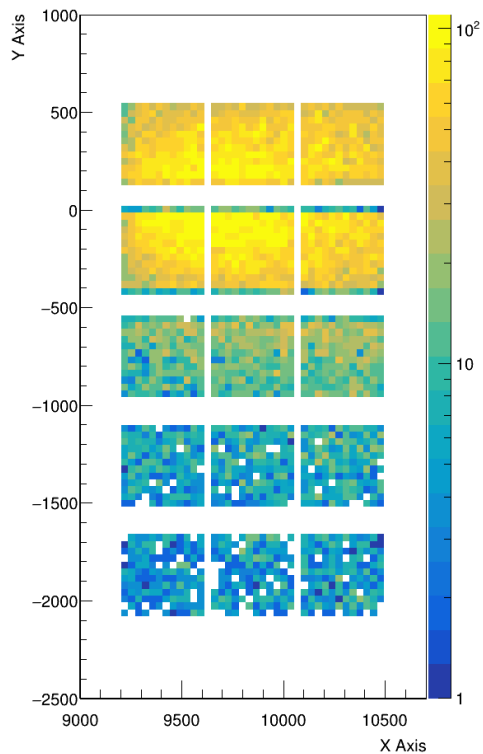


SimpleBoard_2 (8.202e7 POT events)

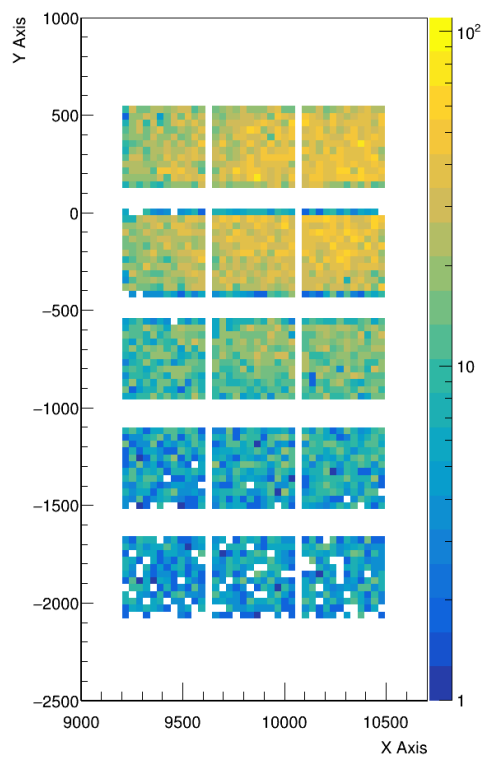


Simple Boards

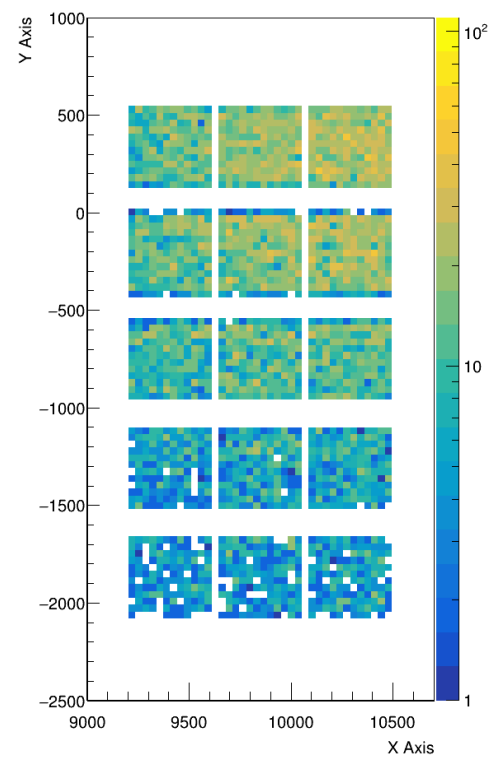
SimpleBoard_0 (8.202e7 POT events)



SimpleBoard_1 (8.202e7 POT events)

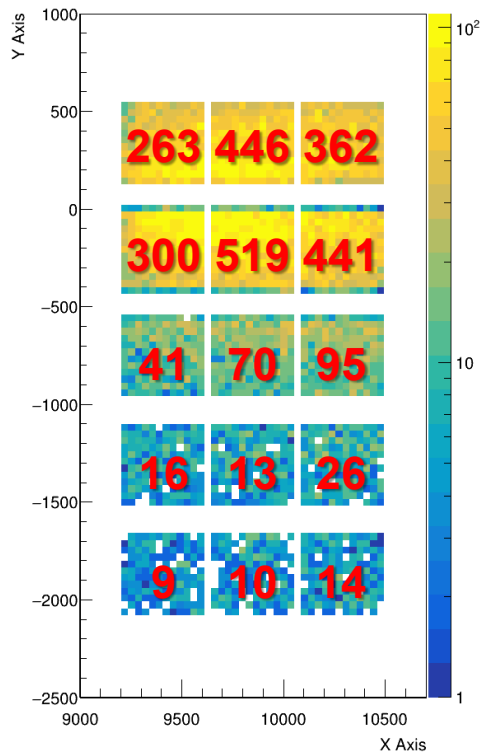


SimpleBoard_2 (8.202e7 POT events)

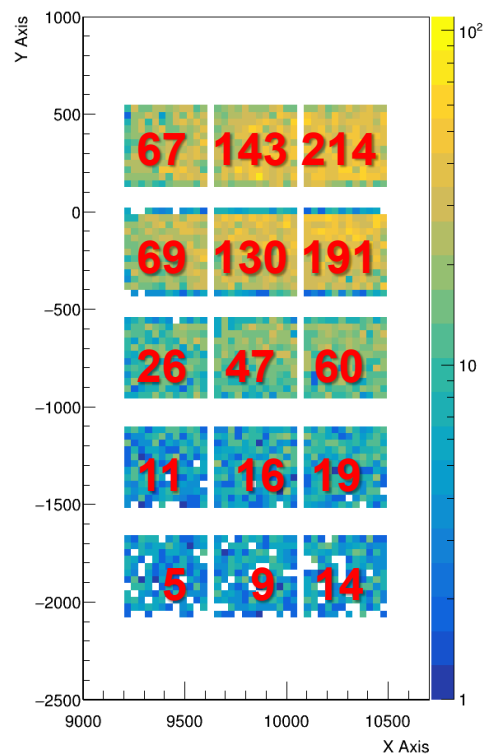


Simple Boards

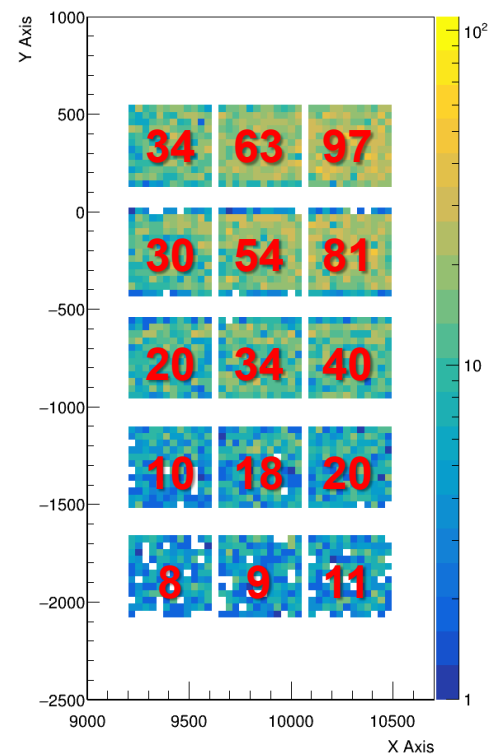
SimpleBoard_0 (8.202e7 POT events)



SimpleBoard_1 (8.202e7 POT events)

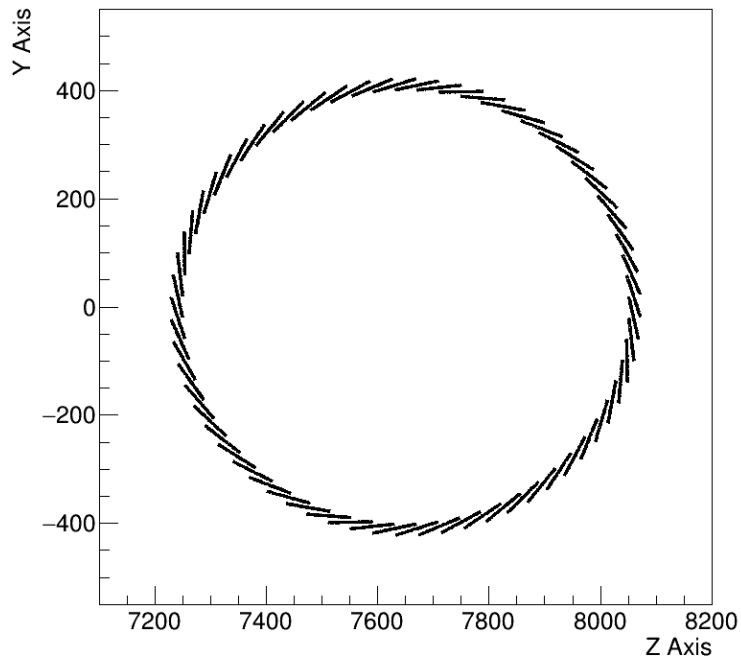


SimpleBoard_2 (8.202e7 POT events)

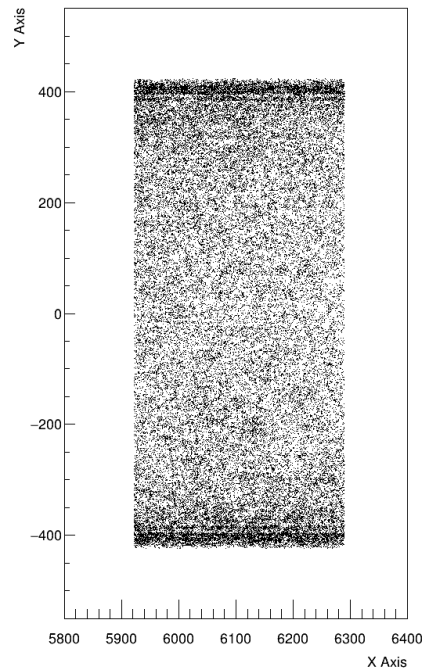


CTH Upstream Inner

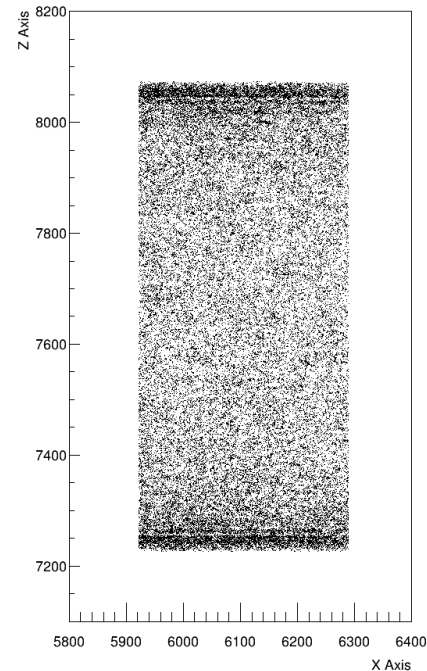
CTH_upstream_inner (8.202e7 POT events)



CTH_upstream_inner (8.202e7 POT events)

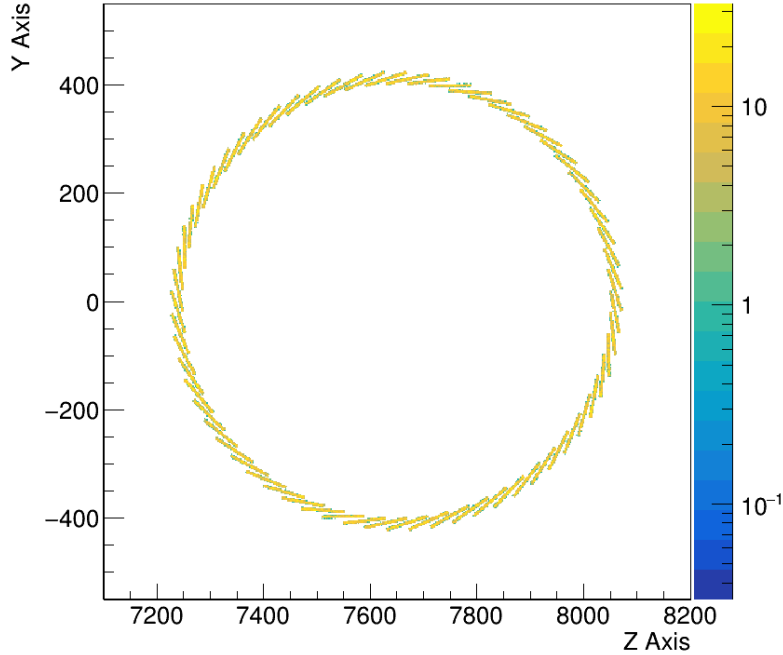


CTH_upstream_inner (8.202e7 POT events)

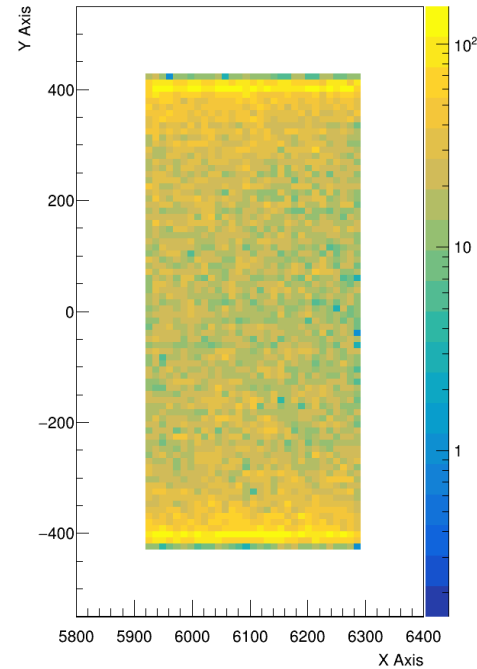


CTH Upstream Inner

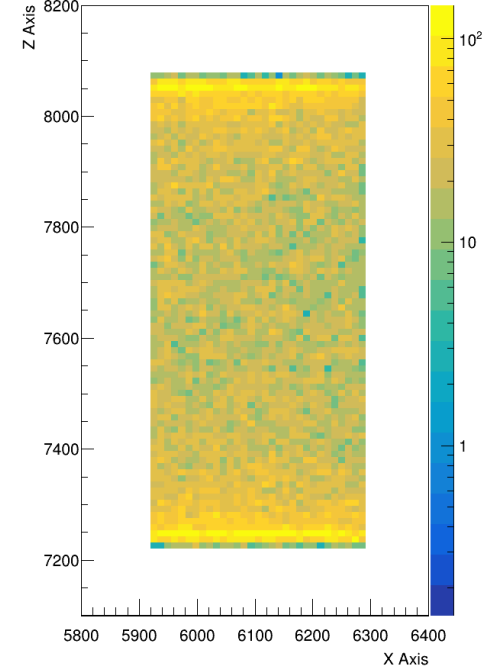
CTH_upstream_inner (8.202e7 POT events)



CTH_upstream_inner (8.202e7 POT events)



CTH_upstream_inner (8.202e7 POT events)



Energy Dose over 150 days: 15.6406 Gy

CTH Key Results

Energy Deposition (over 150 days)

CTH upstream inner: **15.6406 Gy**

CTH upstream outer: **13.7192 Gy**

CTH downstream inner: **25.6846 Gy**

CTH downstream outer: **23.8232 Gy**

Neutron flux (over 150 days)

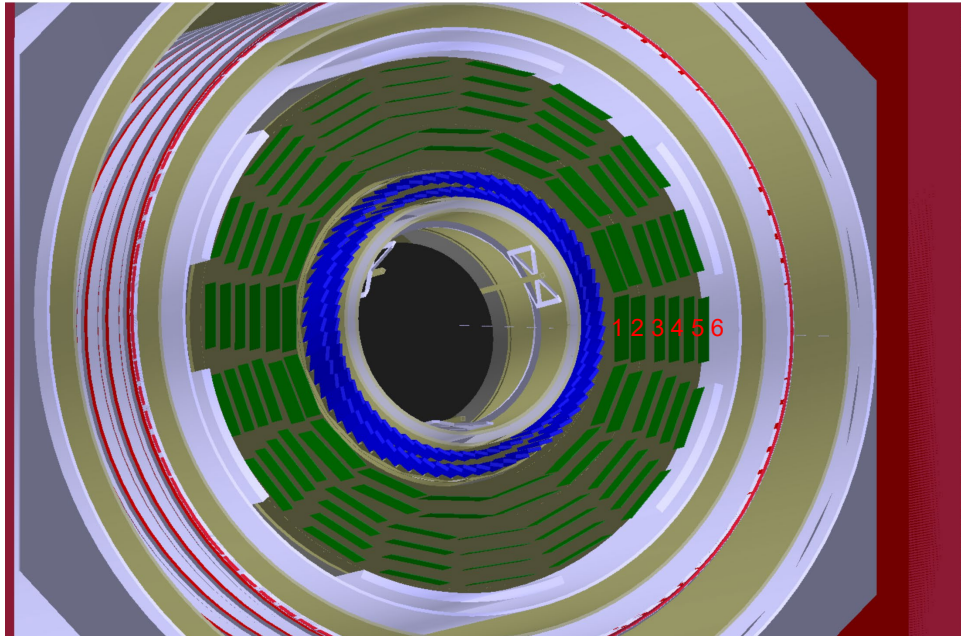
CTH upstream inner: **1.27e+12 per cm²**

CTH upstream outer: **9.86e+11 per cm²**

CTH downstream inner: **6.58e+11 per cm²**

CTH downstream outer: **6.43e+11 per cm²**

RECBE Boards



Energy Deposition over 150 days

RECBE layer 1: **47.2652 Gy**

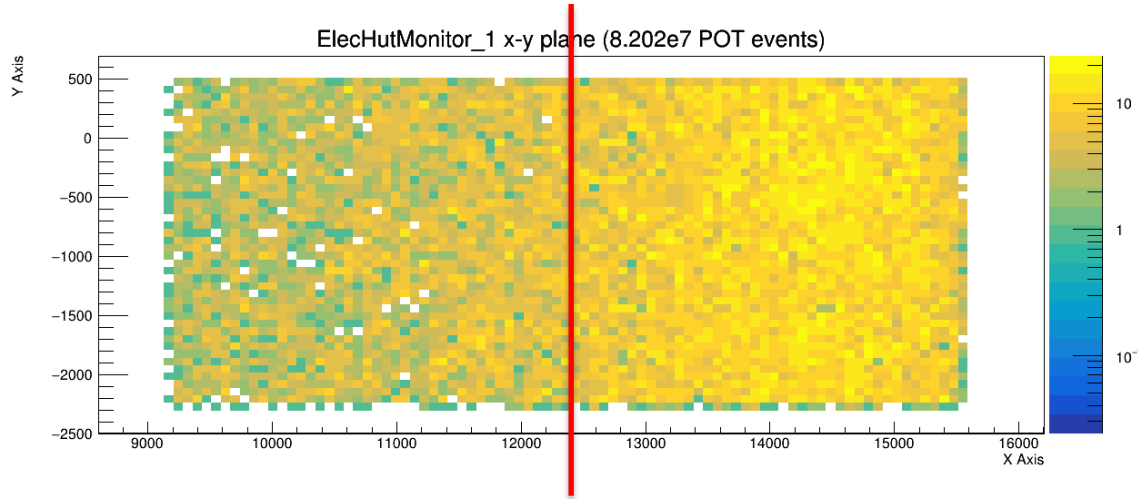
RECBE layer 2: **37.7529 Gy**

RECBE layer 3: **33.8119 Gy**

RECBE layer 4: **29.6808 Gy**

RECBE layer 5: **25.8099 Gy**

RECBE layer 6: **26.2858 Gy**



Energy Deposition (over 150 days): 3.51 Gy

LHS: 2.34 Gy; RHS: 4.68 Gy

Neutron Flux: 3.72e+10 per cm²