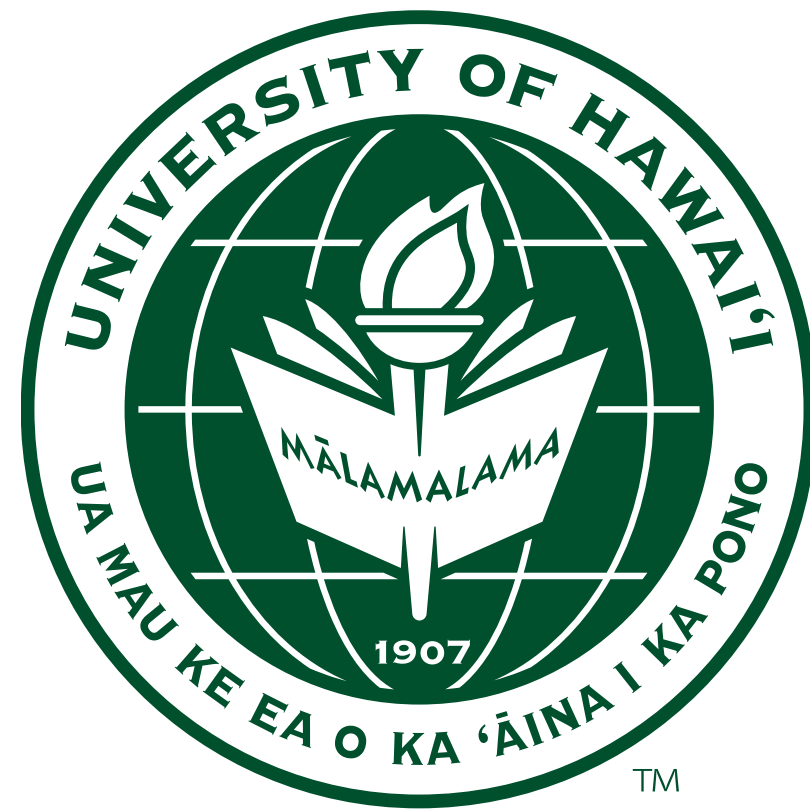


# Photoelectron Laser Update



Alex Dvornikov  
Jelena Maricic  
Ranjan Dharmapalan  
March 26, 2020



# CPA to APA Drift



Imagine Aluminum Coin Here

CPA

APA



# Zoomed View of CPA Section

Simulation Choices:

Coin:  $r = 0.25\text{cm}$ ,  $N_c = 1e5$ ,  $q_c = 100$

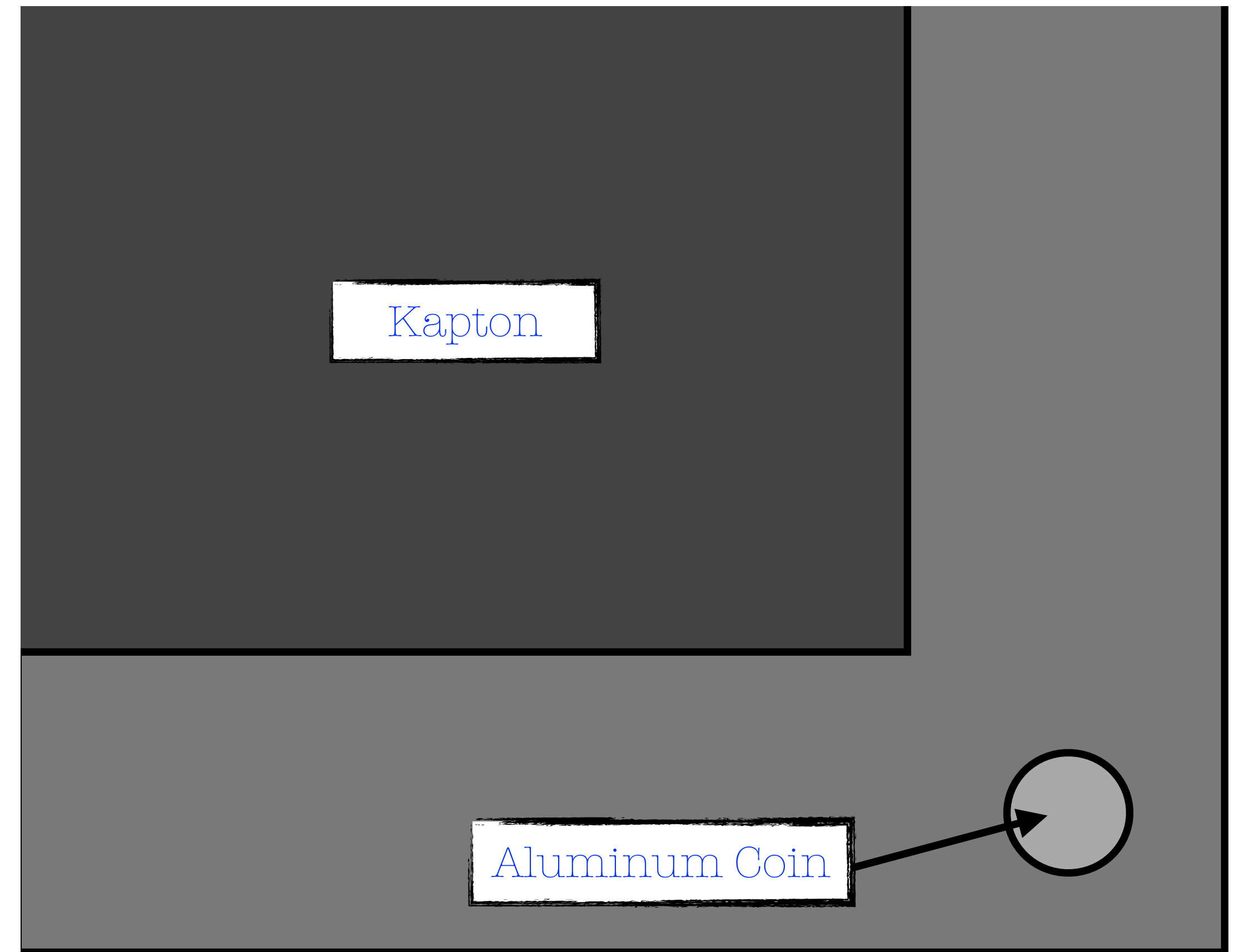
Kapton Plane:  $L = 3\text{cm}$ ,  $N_p = 4.58e4$ ,  $q_p = 100$

Coin-Plane (Center to Center) Distance =  $7.8\text{ cm}$

$N_c$  - # of SimEnergyDeposits on the coin  
 $q_c$  - # of electrons per deposit on the coin

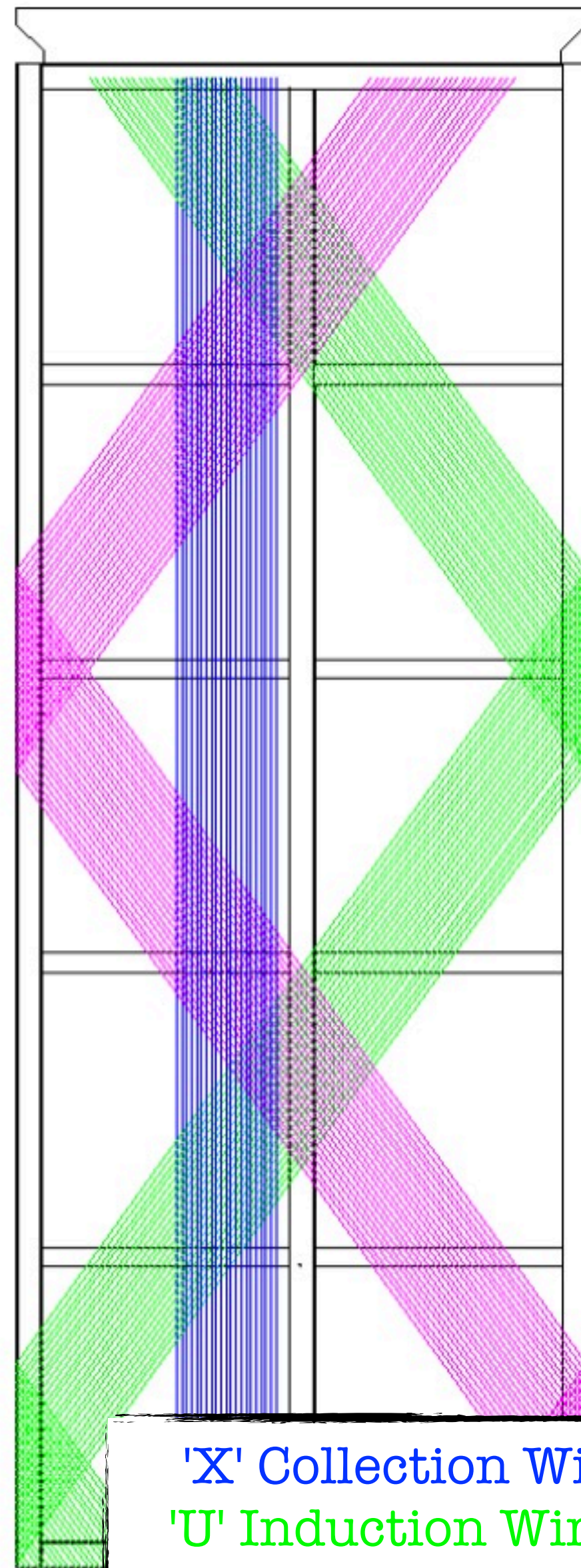
$N_p$  - # of SimEnergyDeposits on the plane (100x less than  $N_c$ )  
 $q_p$  - # of electrons per deposit on the plane

Drift these e's from the CPA to the APA

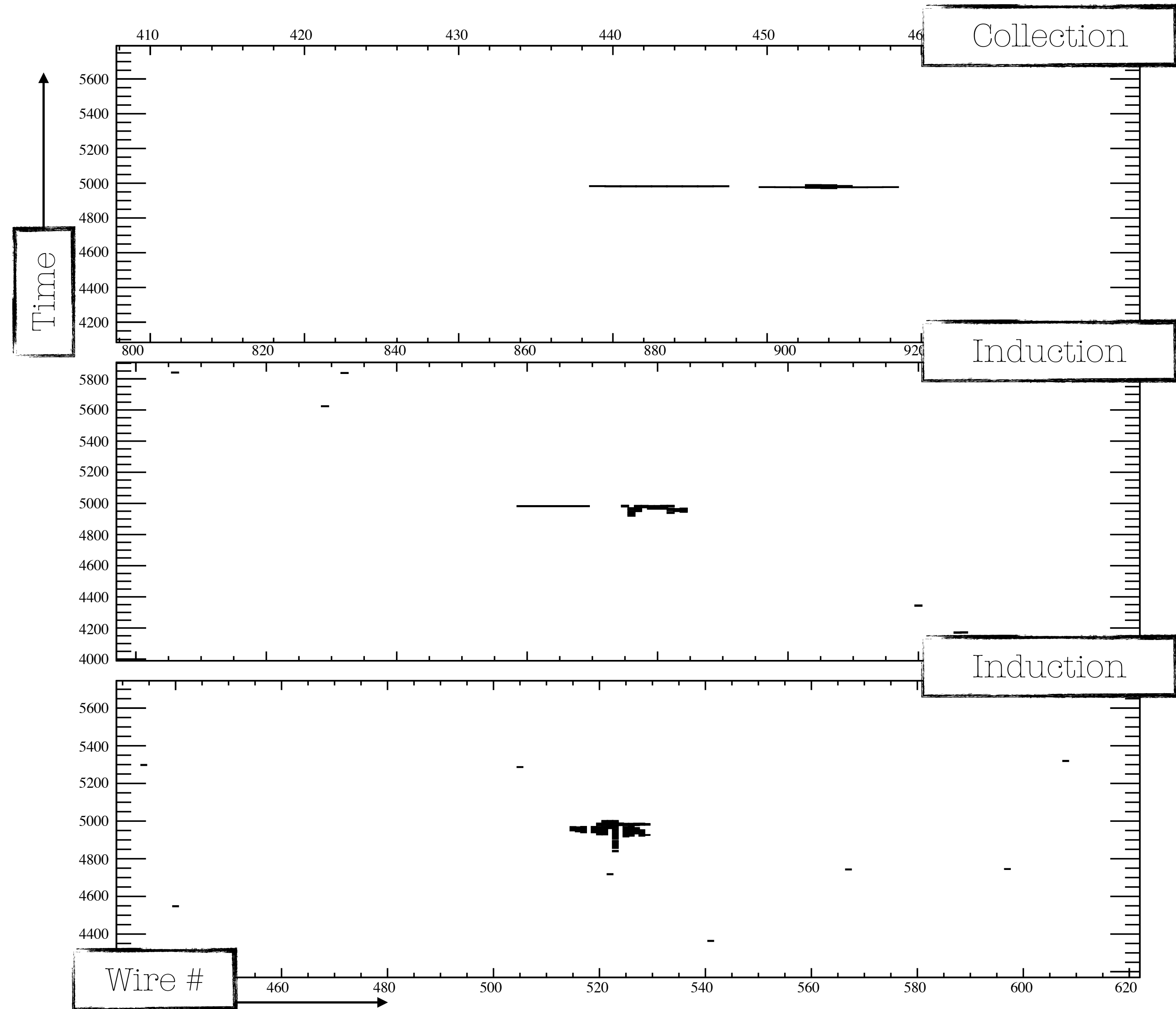


\*Cartoon Not to Scale

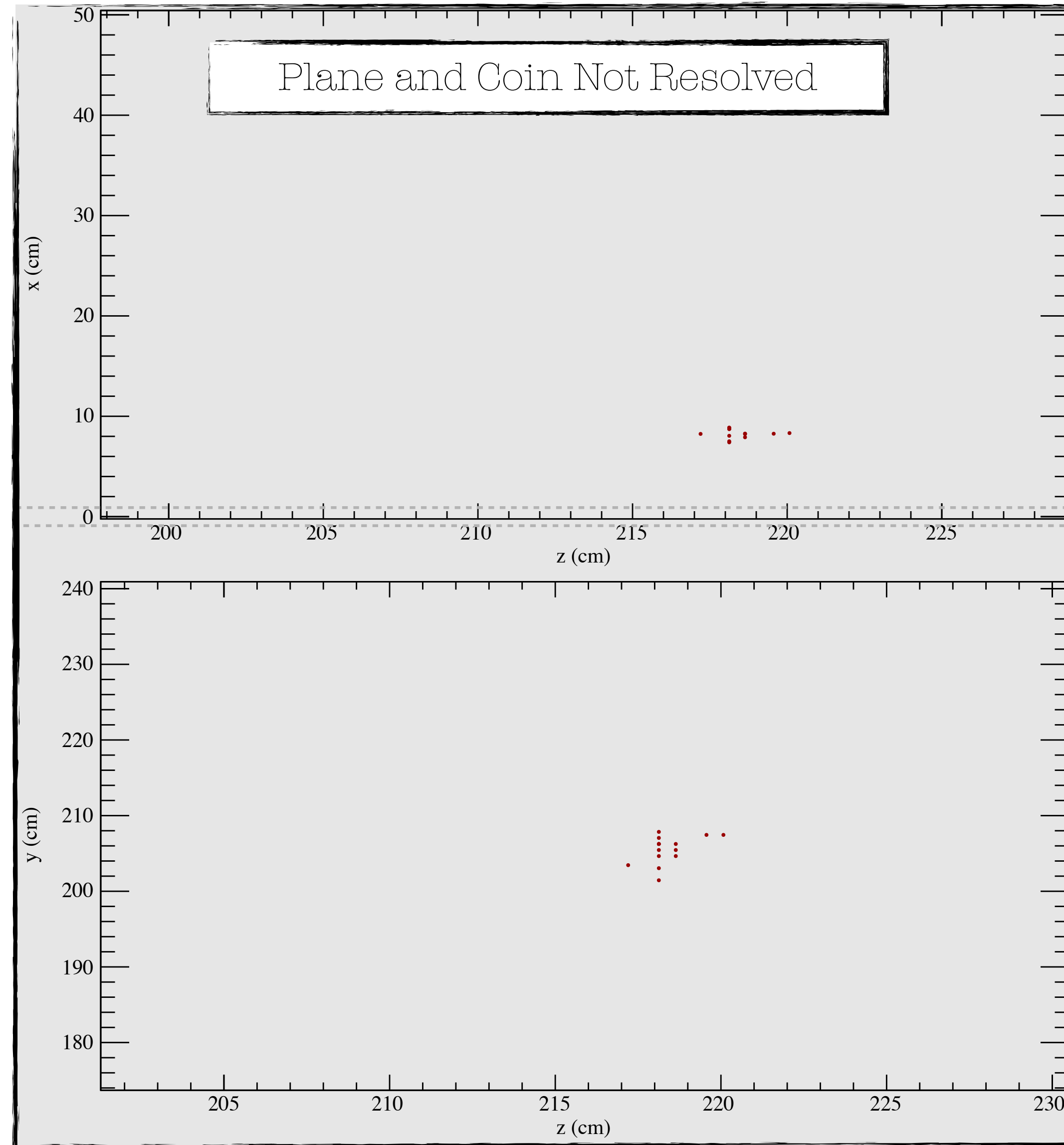
# APA View



'X' Collection Wires - Blue  
'U' Induction Wires - Green  
'V' Induction Wires - Magenta

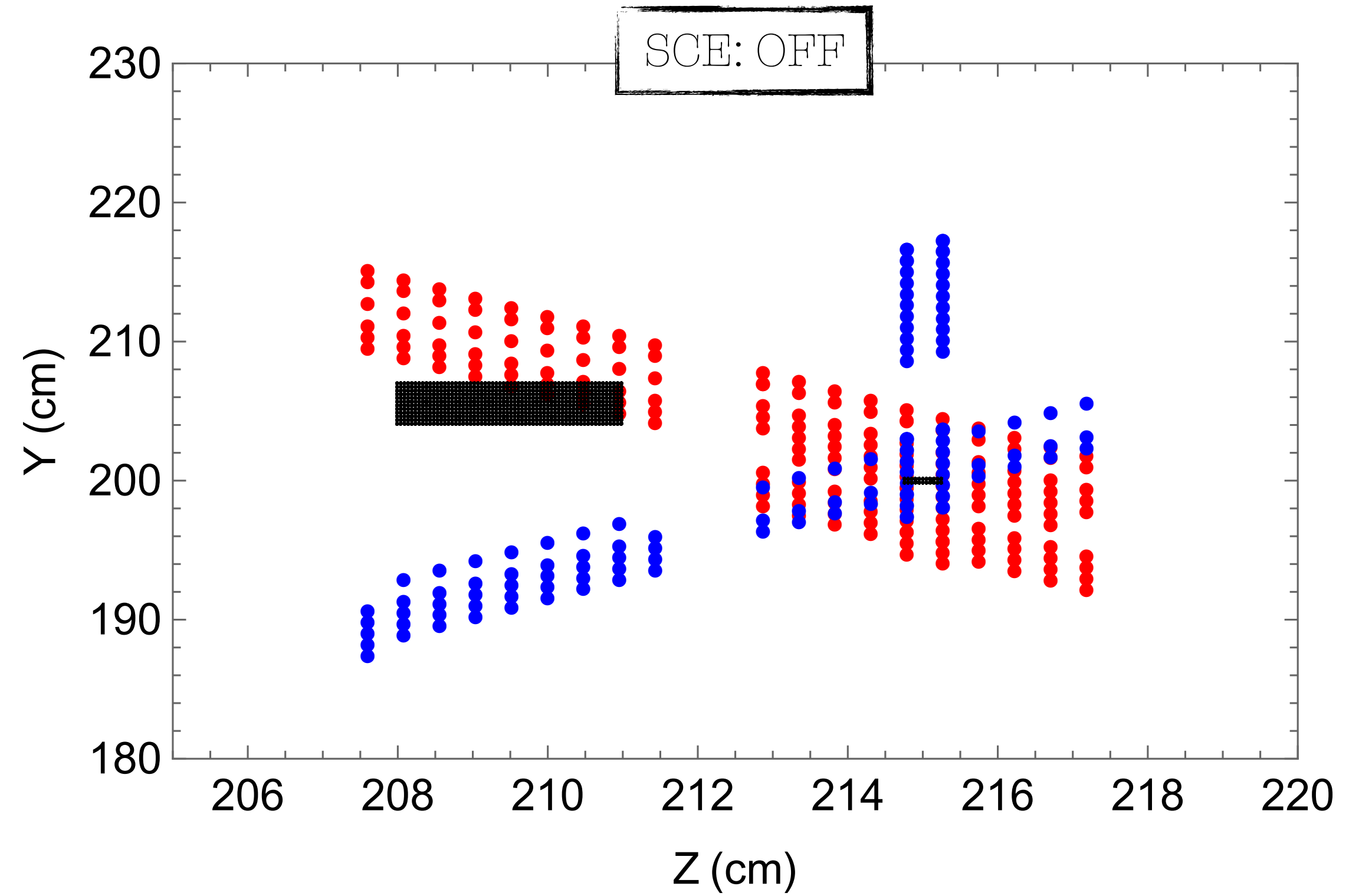
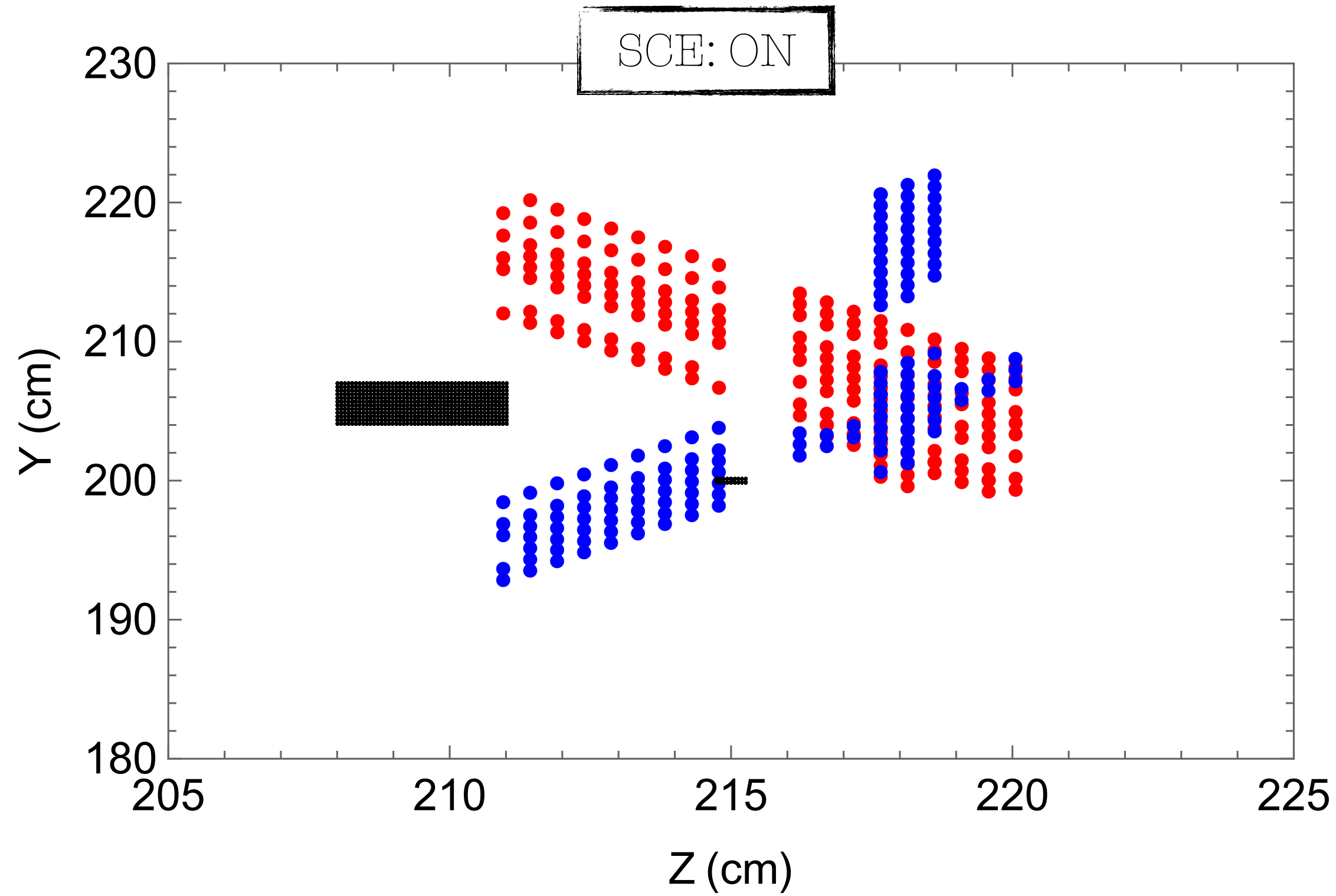


# 'SpacePointSolver' (Default)



# SpacePointSolver 'Raw' Wire Crossings?

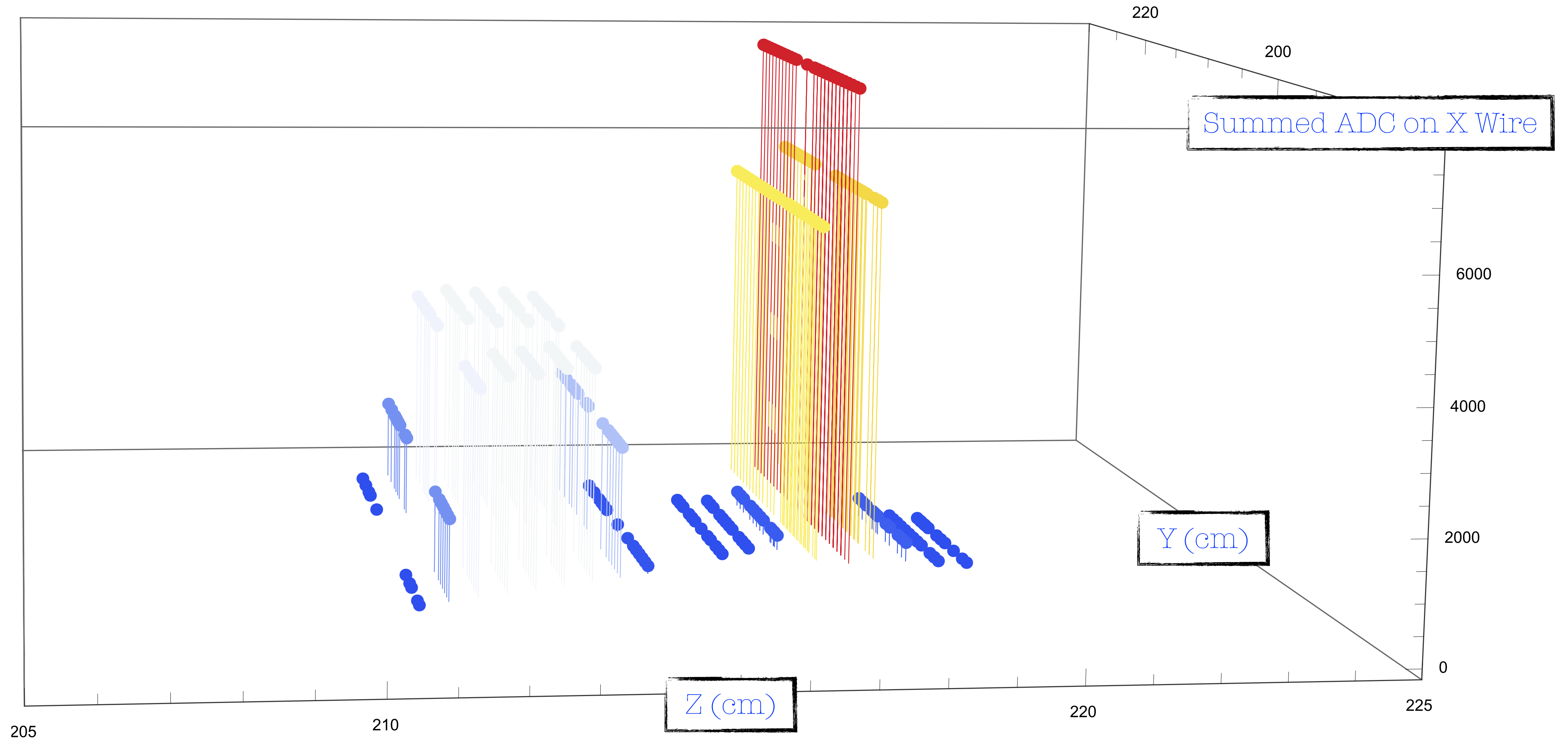
Crossings not enough. Next slide: Crossings + ADCs



Black - Input Distribution (by CPA)  
Blue - XV Intersections (at APA)  
Red - XU Intersections (at APA)



# Crossings + ADCs (X Wires)

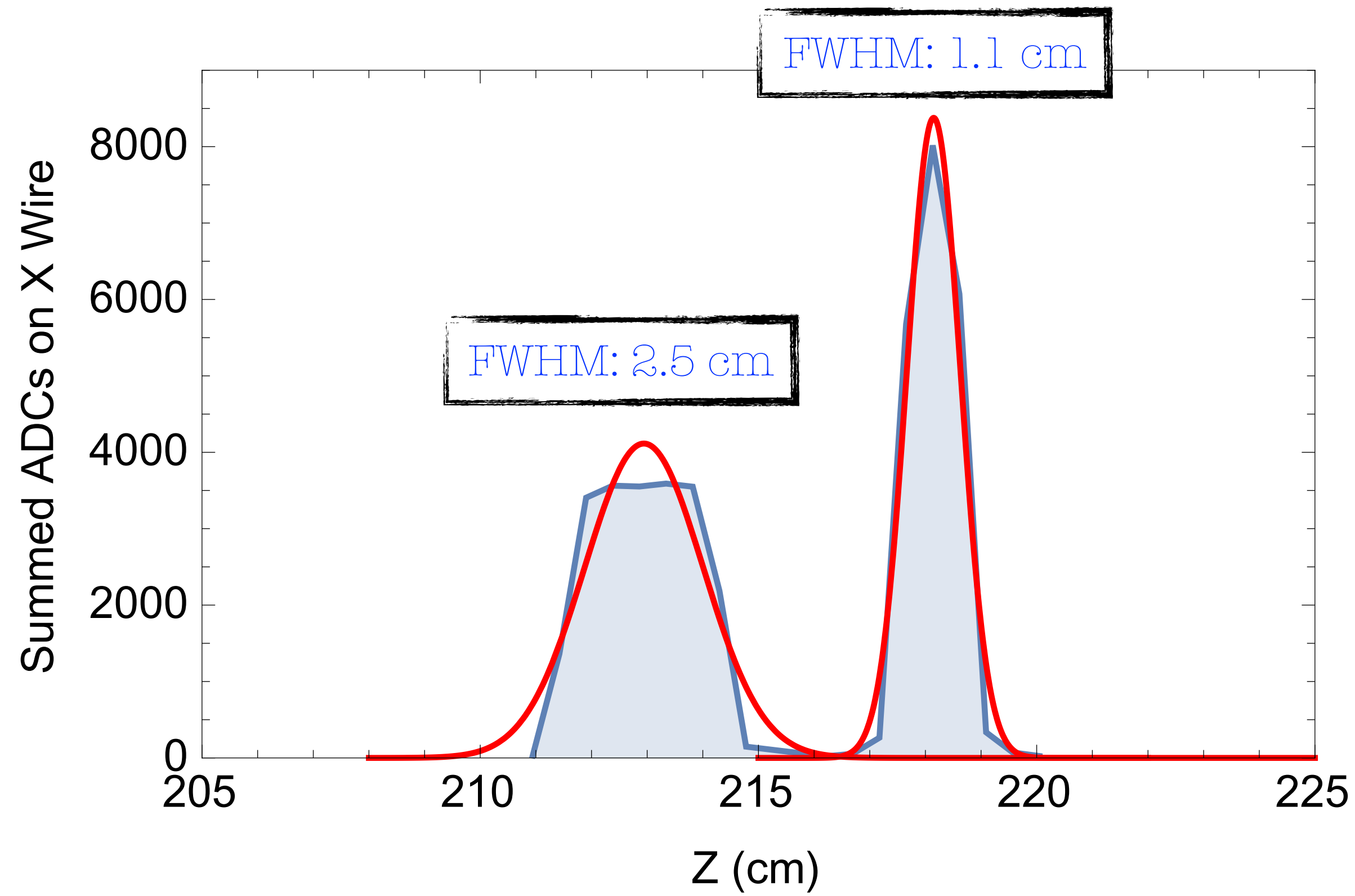


$\tau = 35\text{ms}$ , SCE = ON

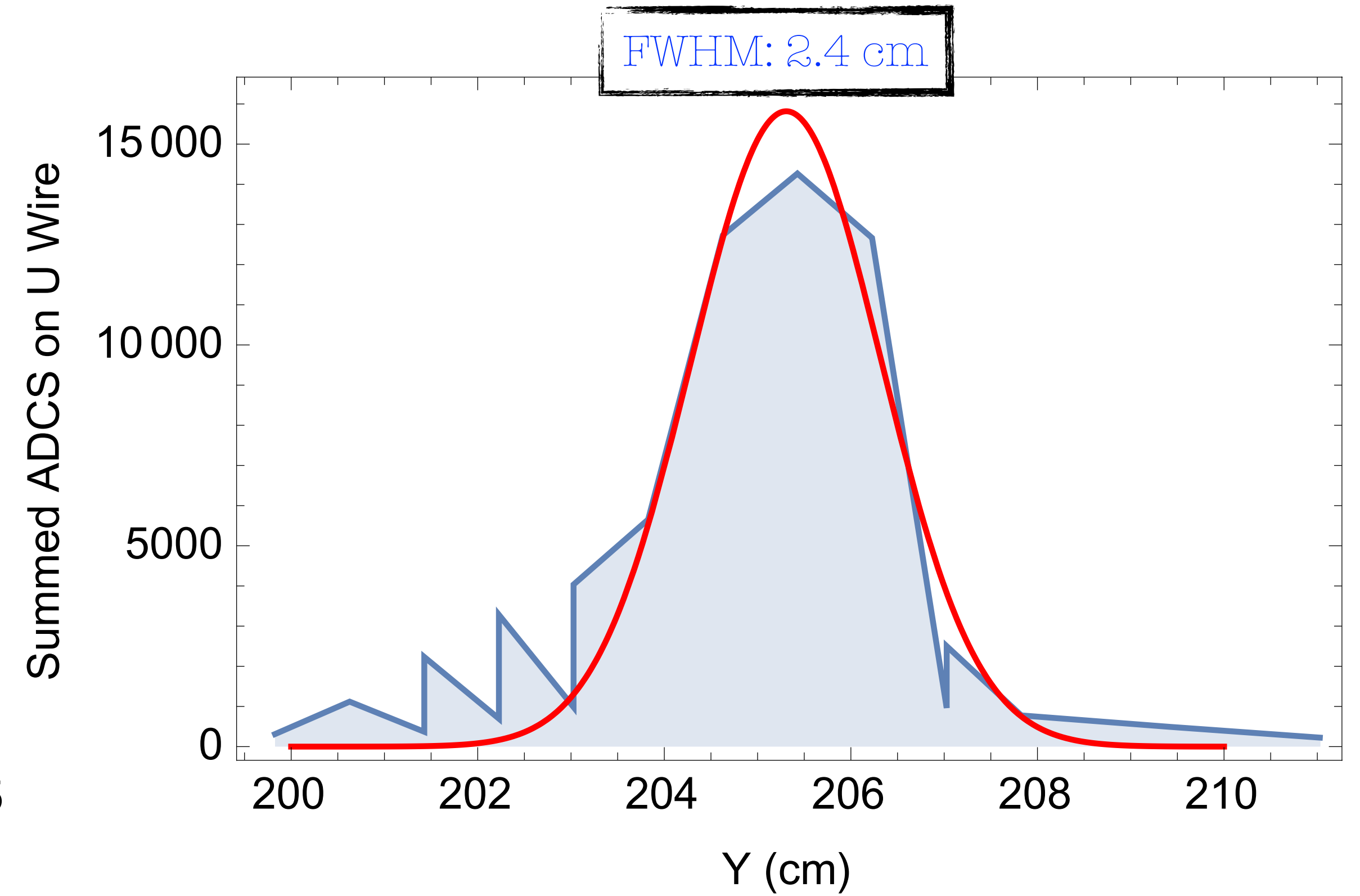
\*X wires are along y

# Some Slices

U wire @  $y = 217.8$  cm Intersecting X Wires



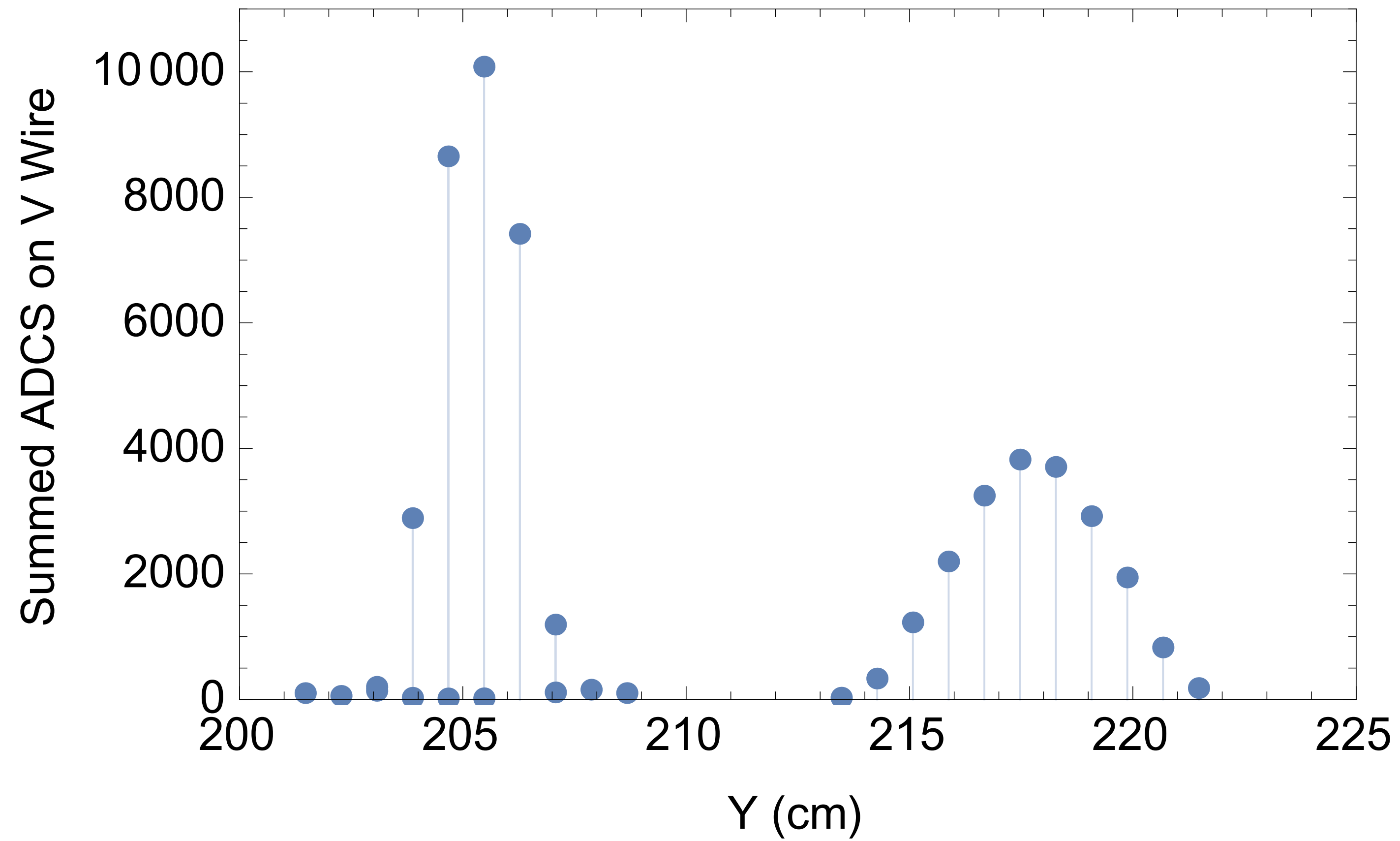
Max X wire @  $z = 218.1$  cm Intersecting U Wires



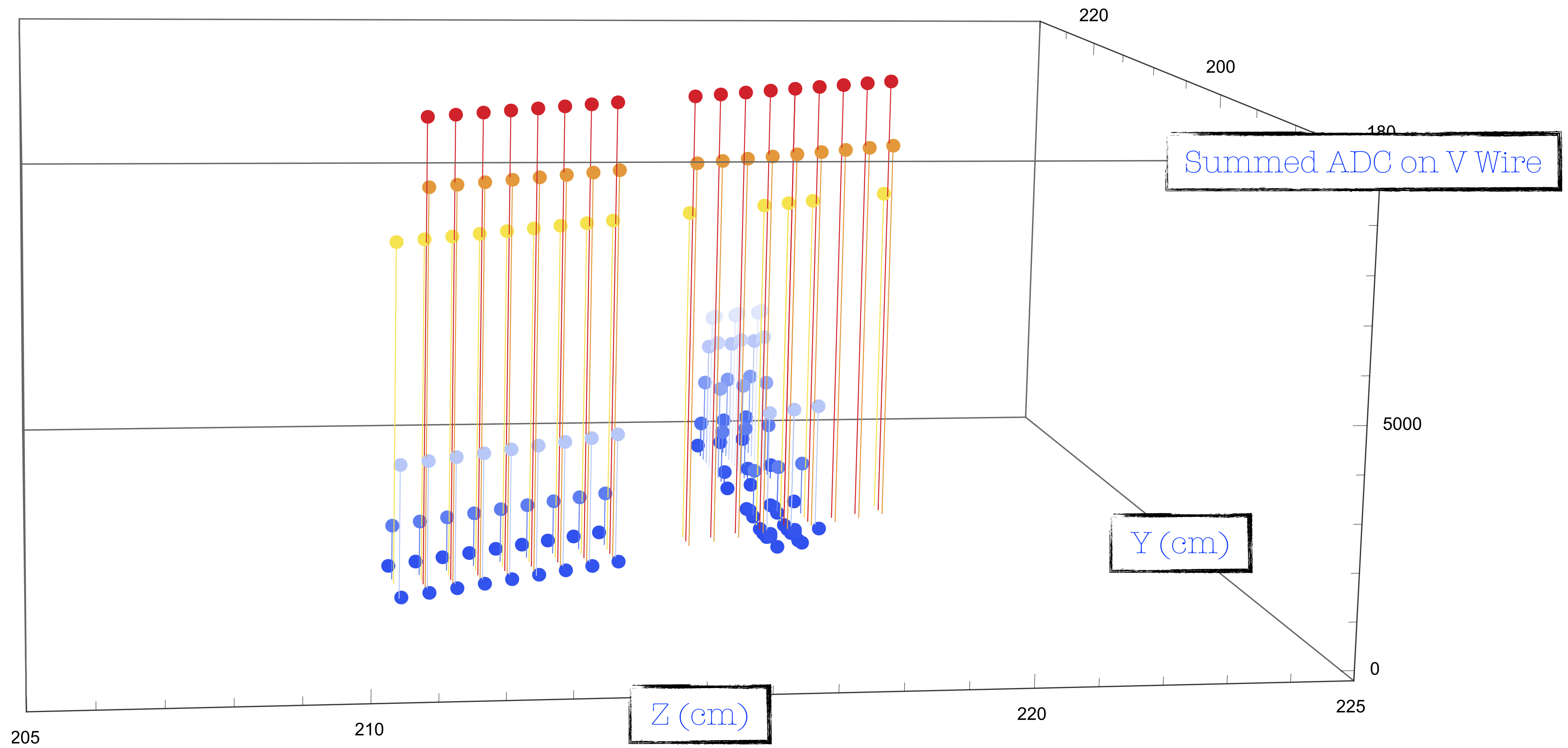


# Another Slice

Max X wire @  $z = 218.1$  cm Intersecting V Wires



# Crossings + ADCs (V Wires)





# Crossings + ADCs (U Wires)

