

SVD Background simulation

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Outline of Talk :

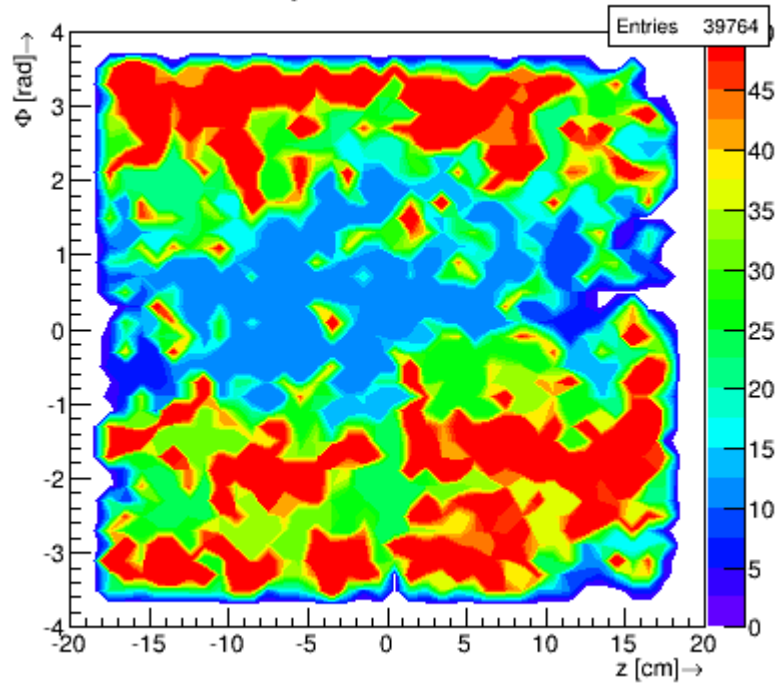
- Introduction
- SVD background study
- Radiation Dose in each layer
- Neutron Flux in each layer
- Summary and Future Plan

Introduction:

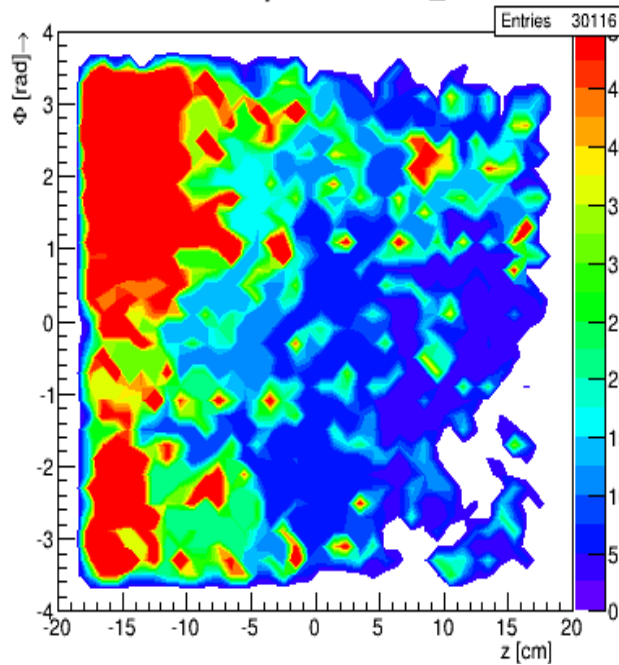
- Using background sample (Touschek_LER, Touschek_HER, RBB_LER , RBB_HER, Coulomb_LER and coulomb_HER) 1 millisecond from 10th Campaign
- Using QED background data taken from 9th MC campaign
- We have reduced file of SynchRad background files.

Deposition energy by background type: $(\Phi - z)$ in layer 3

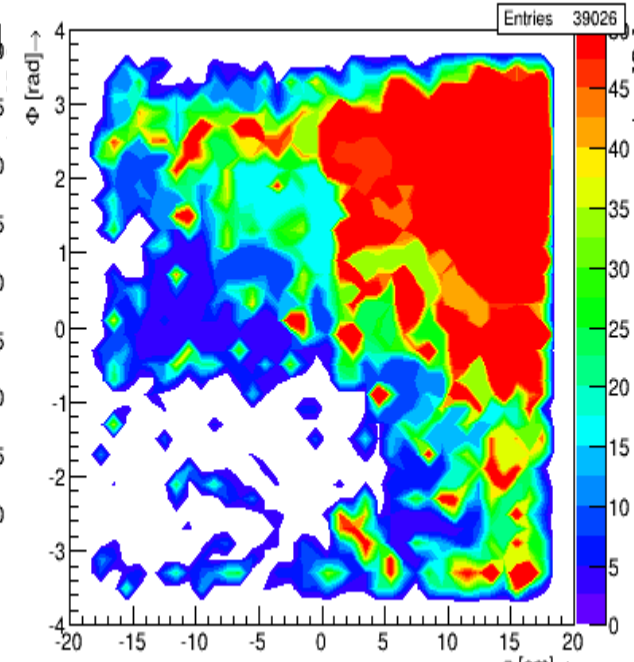
Dose in Layer 3 for Coulomb_LER



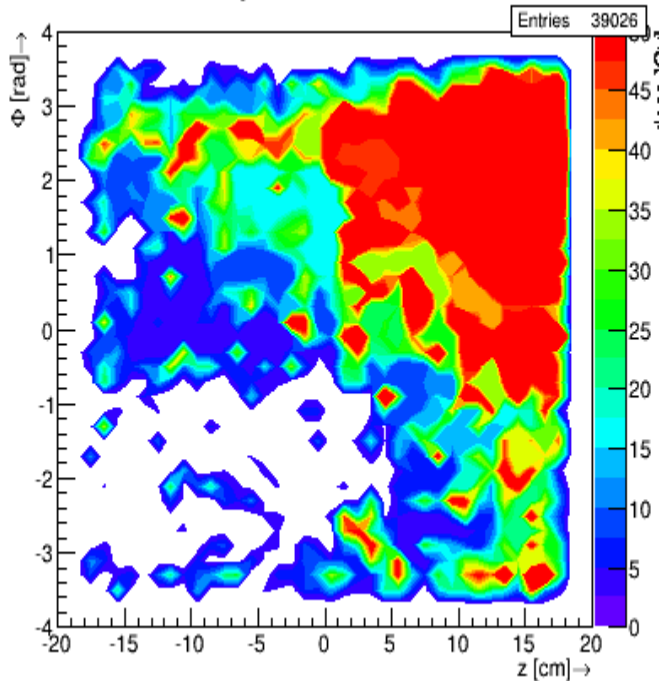
Dose in Layer 3 for RBB_LER



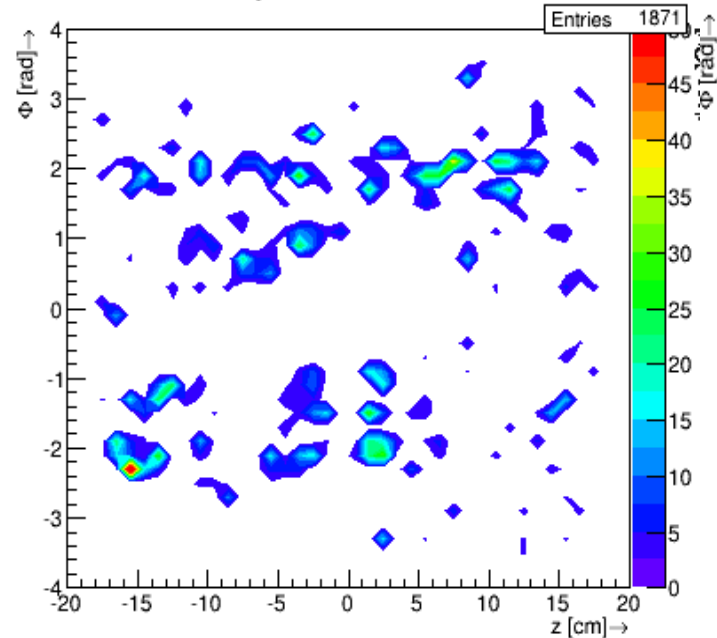
Dose in Layer 3 for RBB_HER



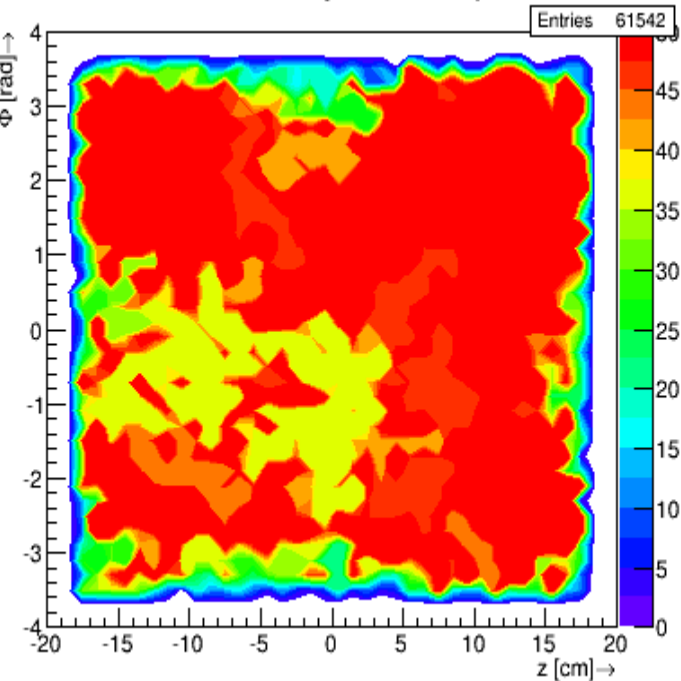
Dose in Layer 3 for Touschek_LER



Dose in Layer 3 for Touschek_HER

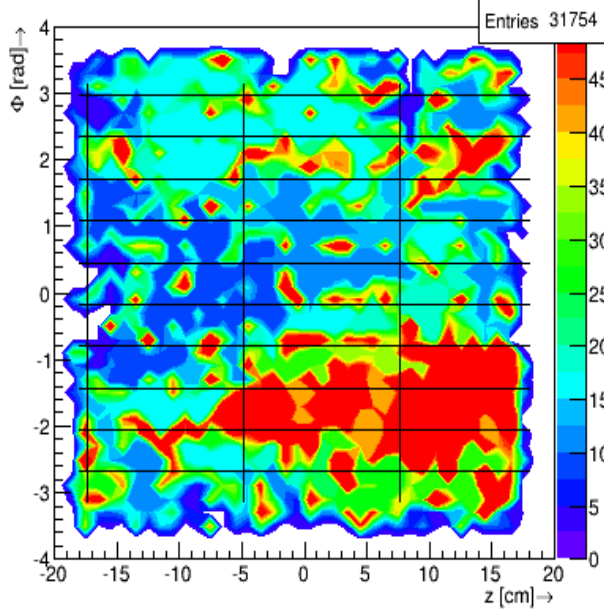


Dose in Layer 3 for 2- γ

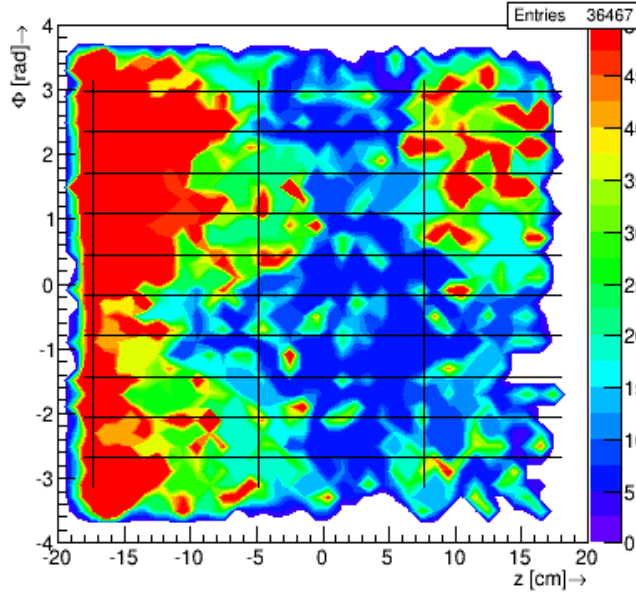


Deposition energy by background type:($\Phi - z$) in layer 4

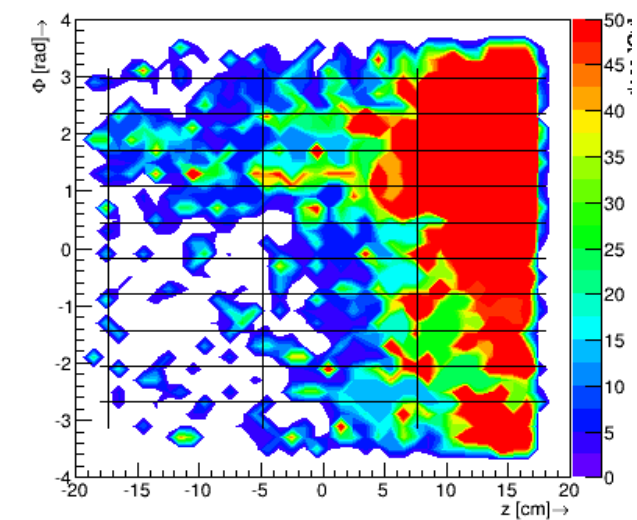
Dose in Layer 4 for Coulomb_LER



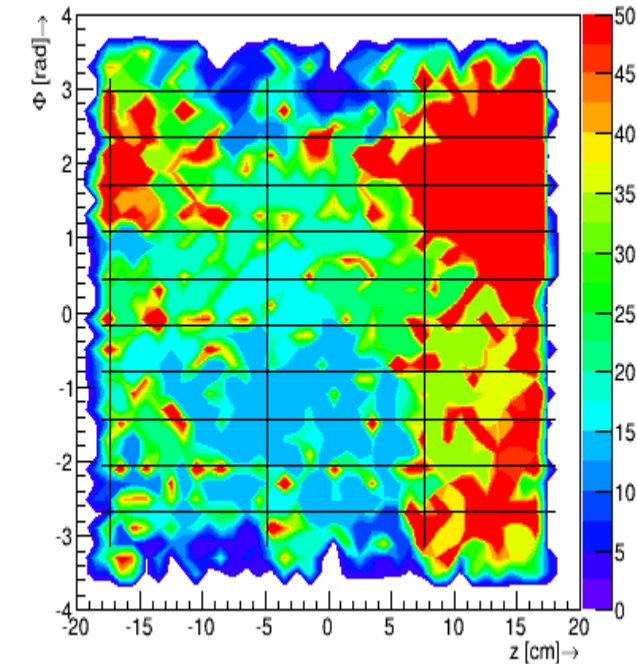
Dose in Layer 4 for RBB_LER



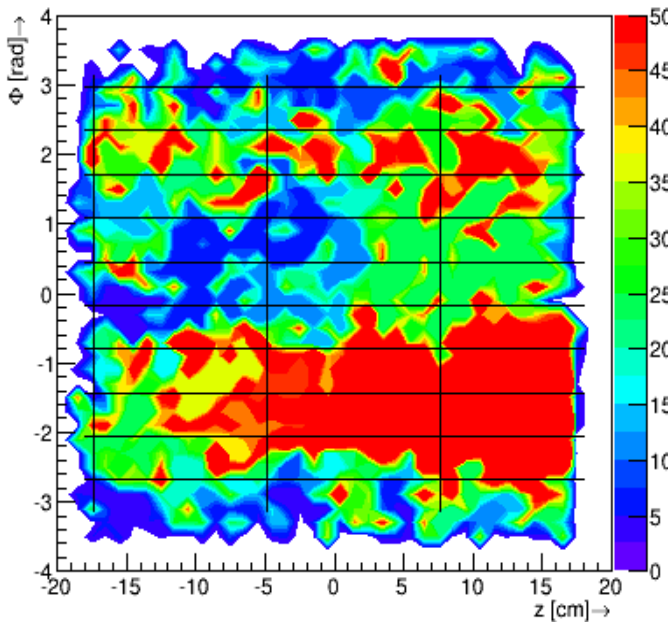
Dose in Layer 4 for RBB_HER



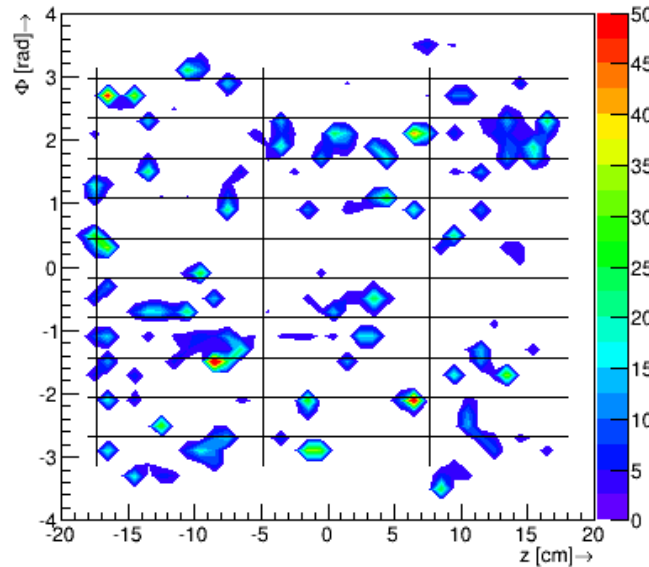
Dose in Layer 4 for 2- γ



Dose in Layer 4 for Touschek_LER

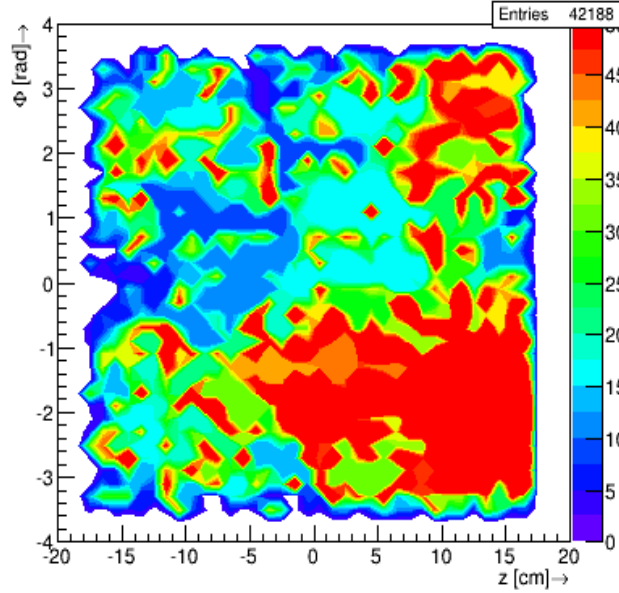


Dose in Layer 4 for Touschek_HER

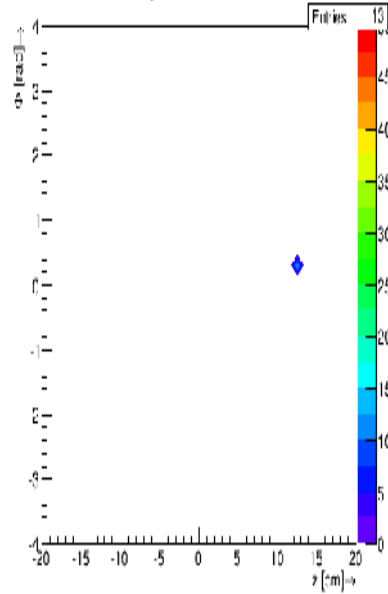


Deposition energy by background type: $(\Phi - z)$ in layer 5

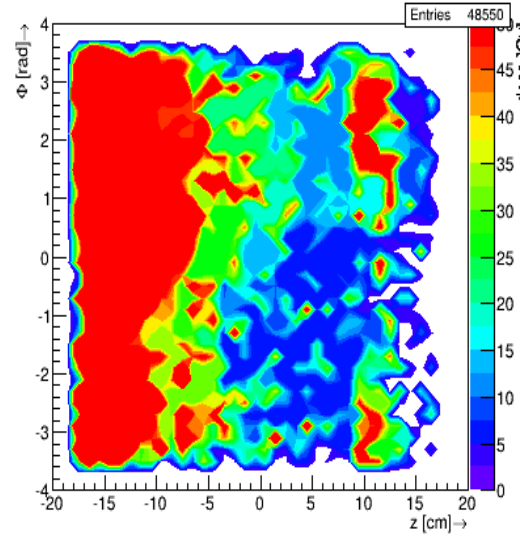
Dose in Layer 5 for Coulomb_LER



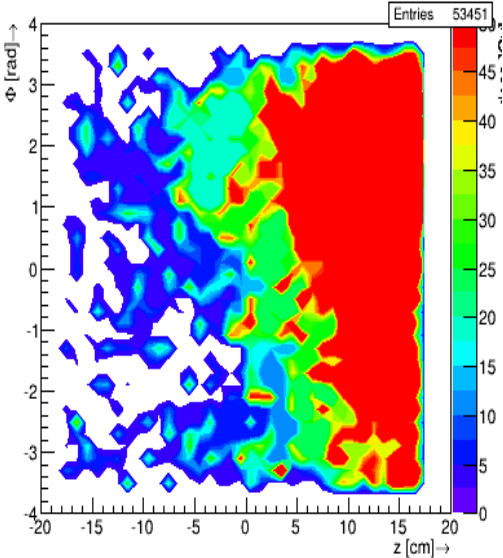
Dose in Layer 5 for Coulomb_HER



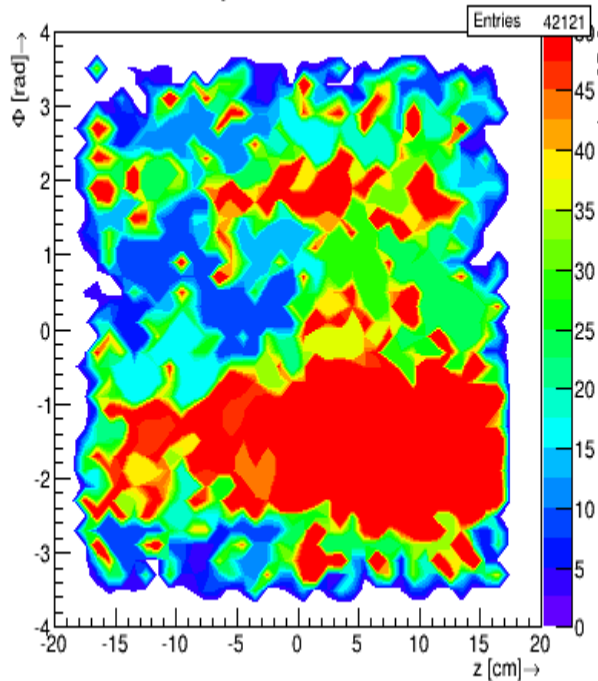
Dose in Layer 5 for RBB_LER



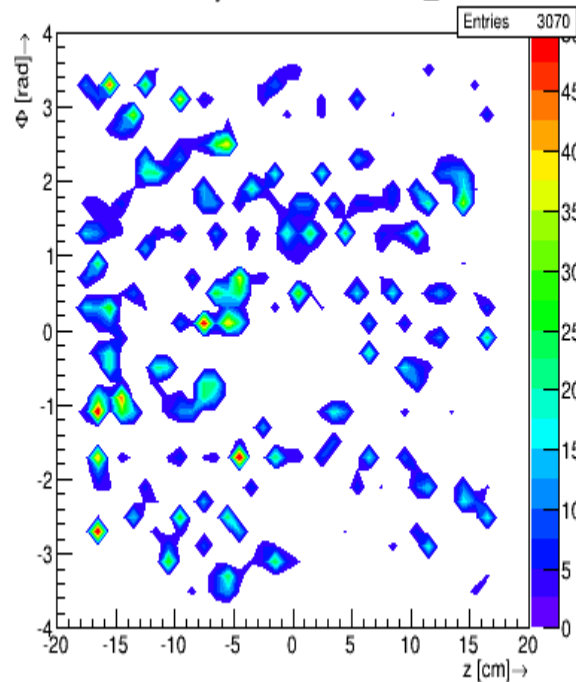
Dose in Layer 5 for RBB_HER



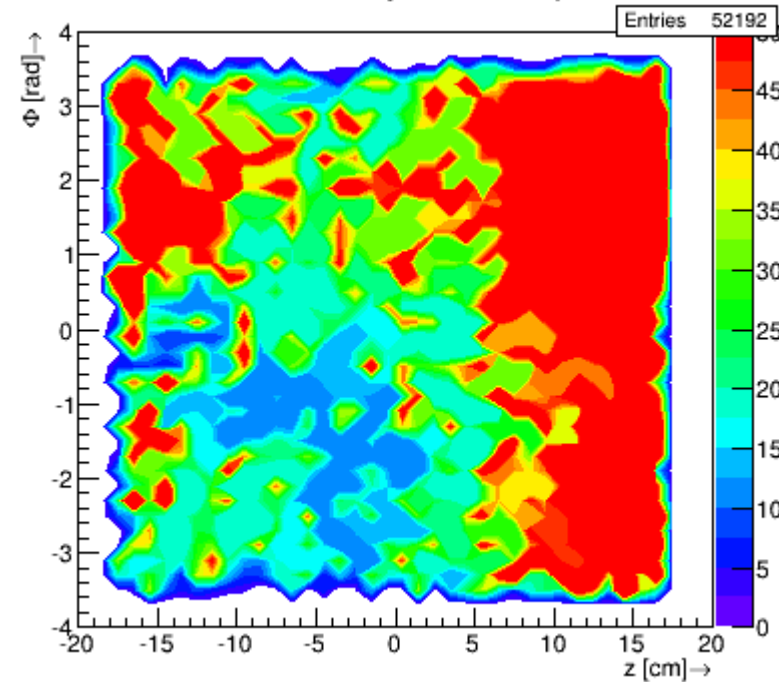
Dose in Layer 5 for Touschek_LER



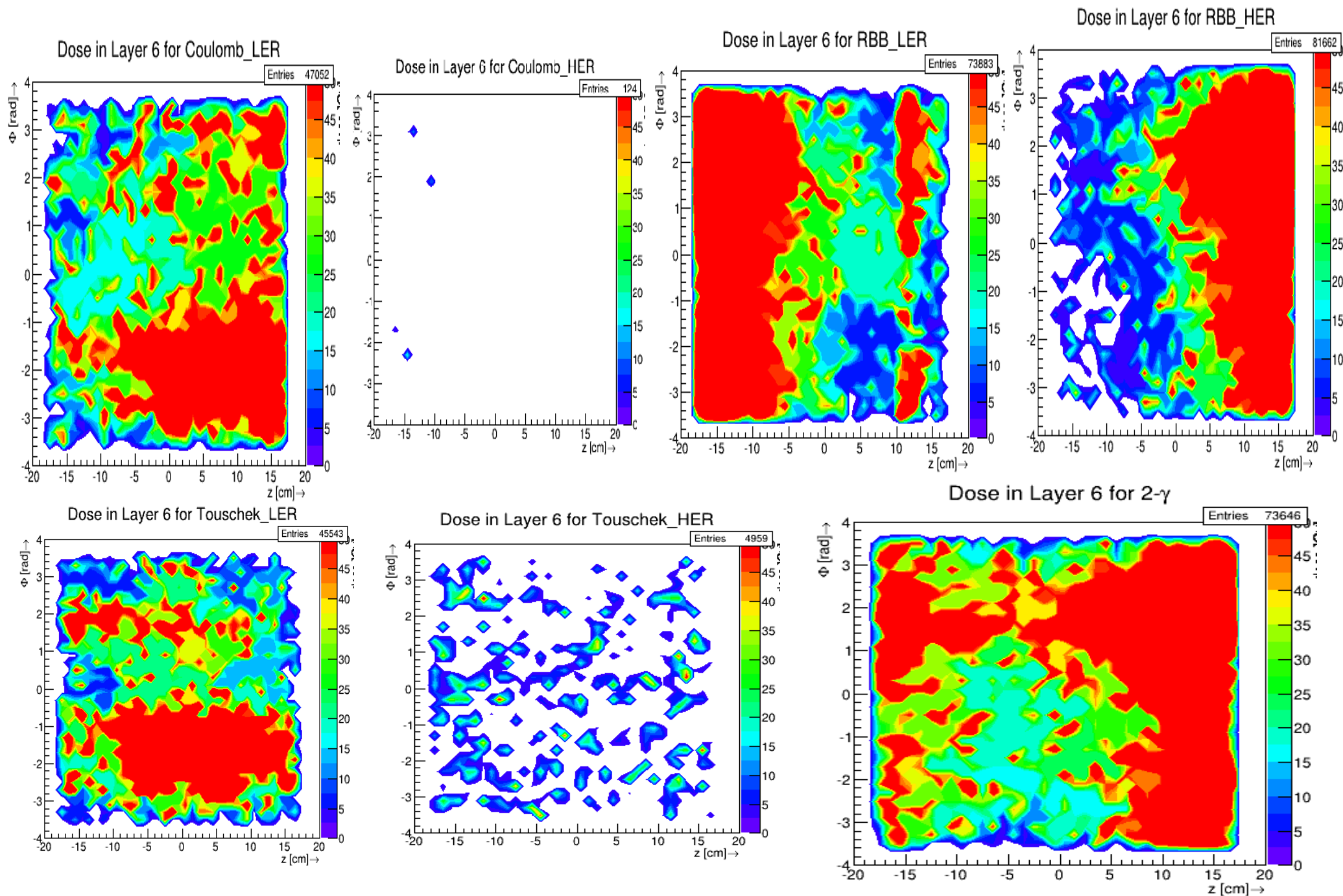
Dose in Layer 5 for Touschek_HER



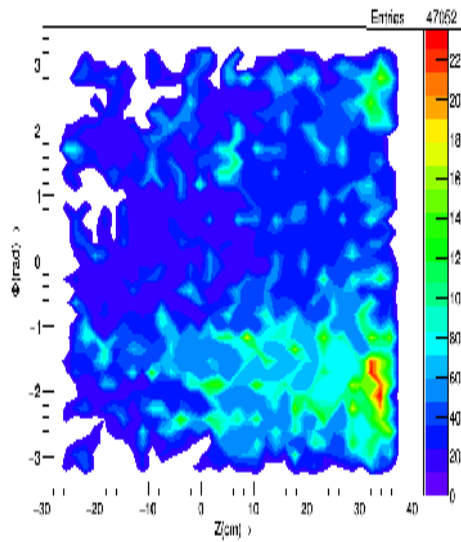
Dose in Layer 5 for 2- γ



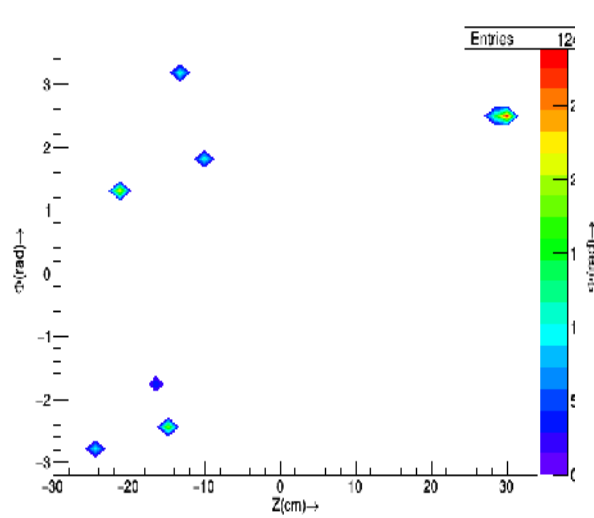
Deposition energy by background type:($\Phi - z$) in layer 6



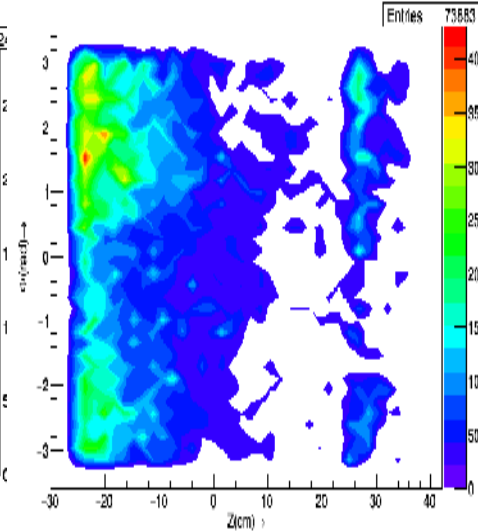
Deposition energy by background type: $(\Phi - z)$ in layer 6 new BG file with new SVD geometry(Synchrotron radiation)



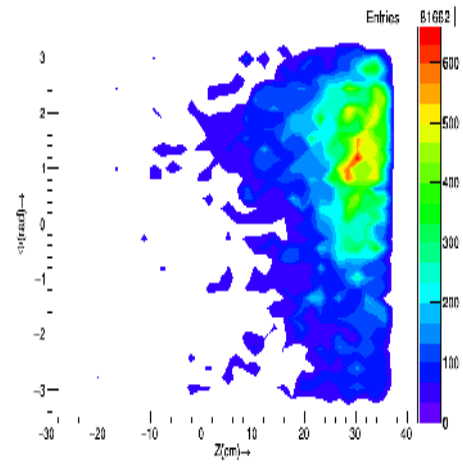
Coulomb_LER



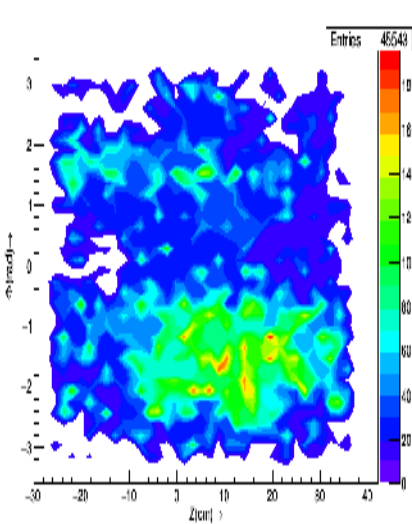
Coulomb_HER



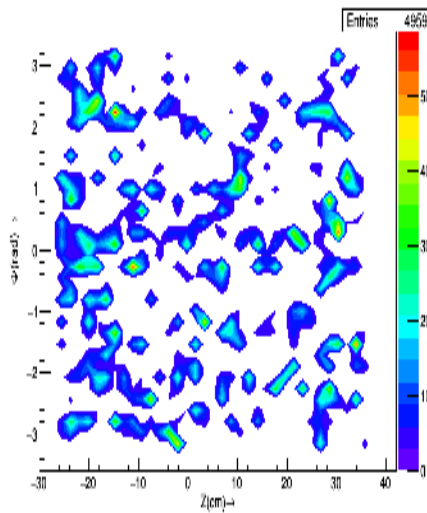
RBB_LER



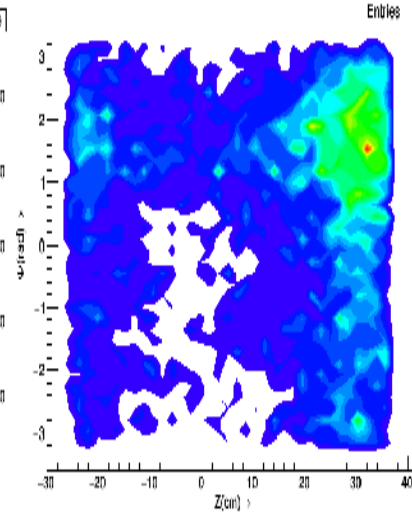
RBB_HER



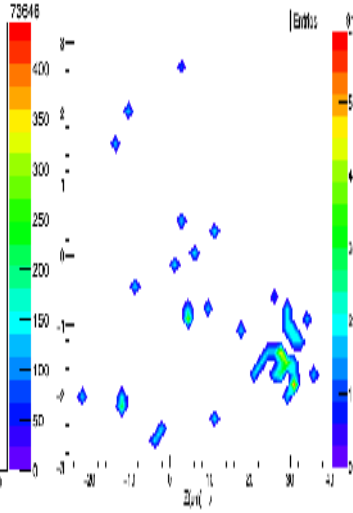
Touschek_LER



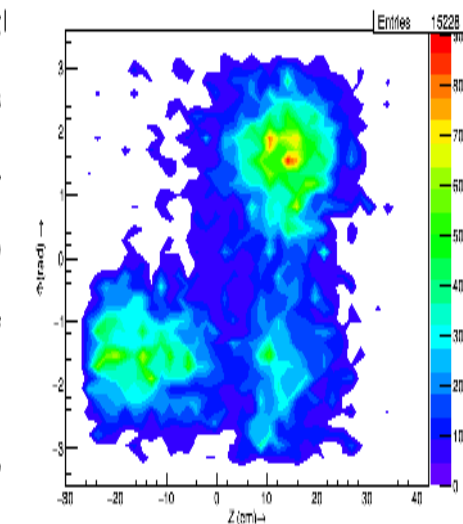
Touschek_HER



QED

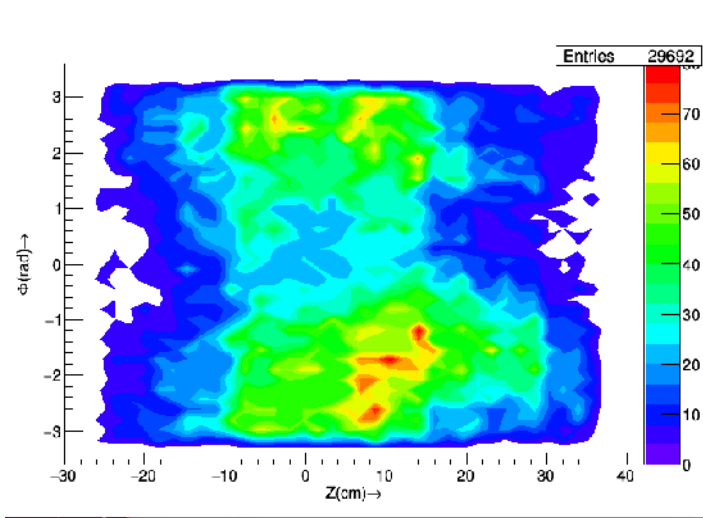


Sr_LER

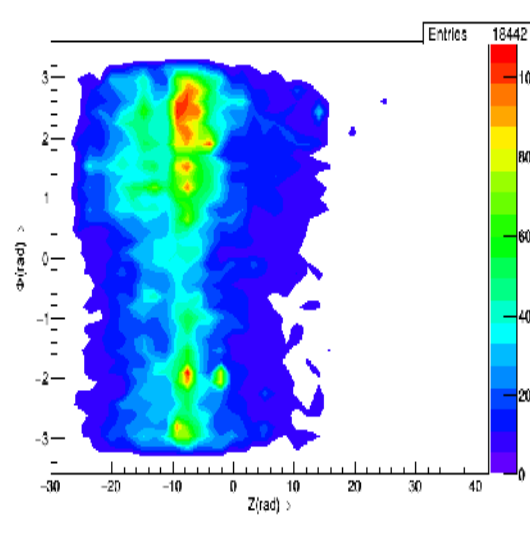


Sr_HER

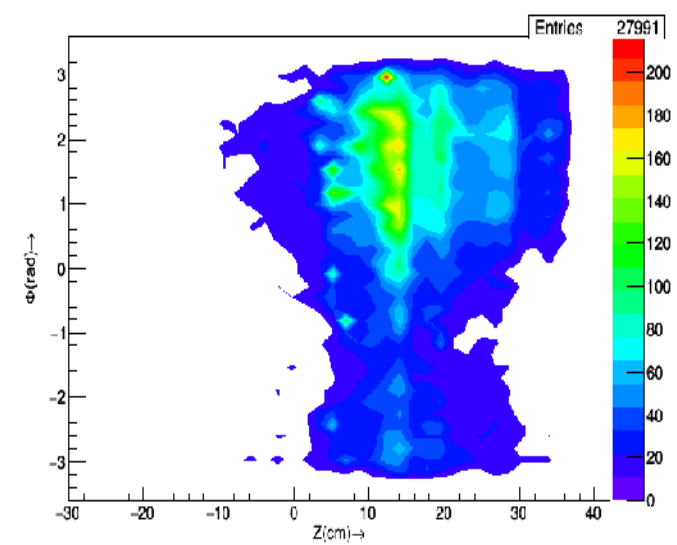
Neutron Flux by background type:($\Phi - z$) in layer 3



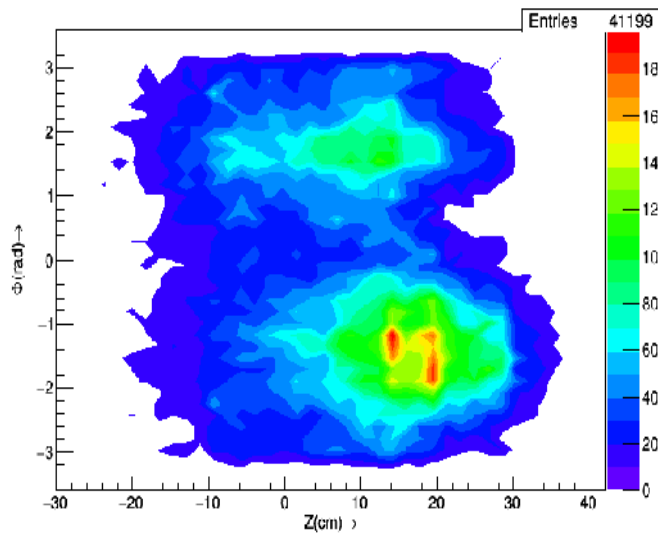
Coulomb_LER



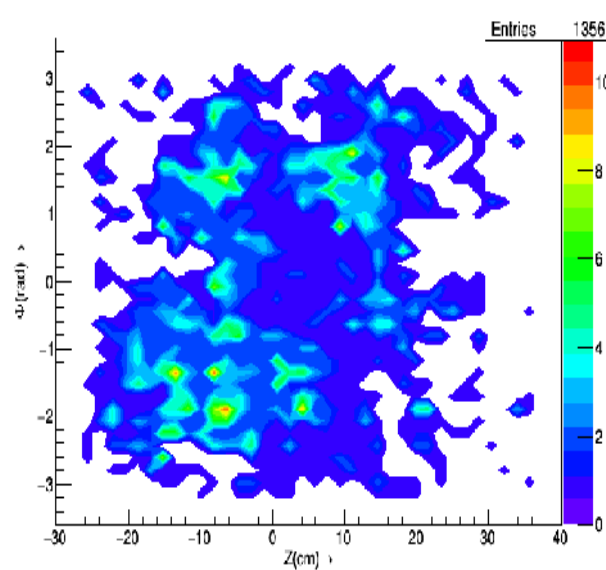
RBB_LER



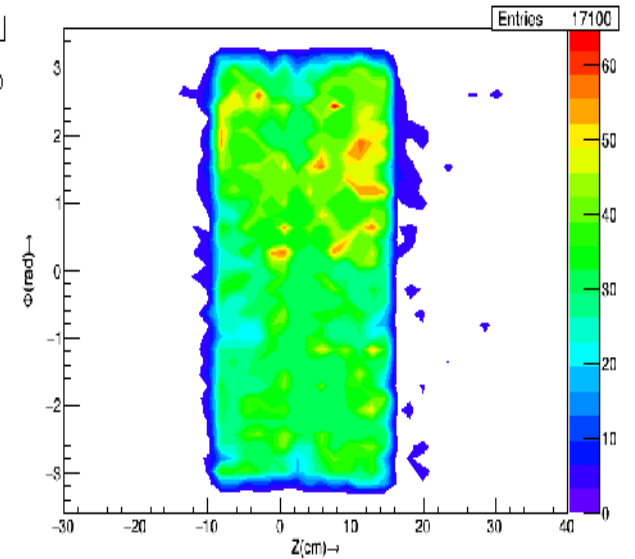
RBB_HER



Touschek_LER

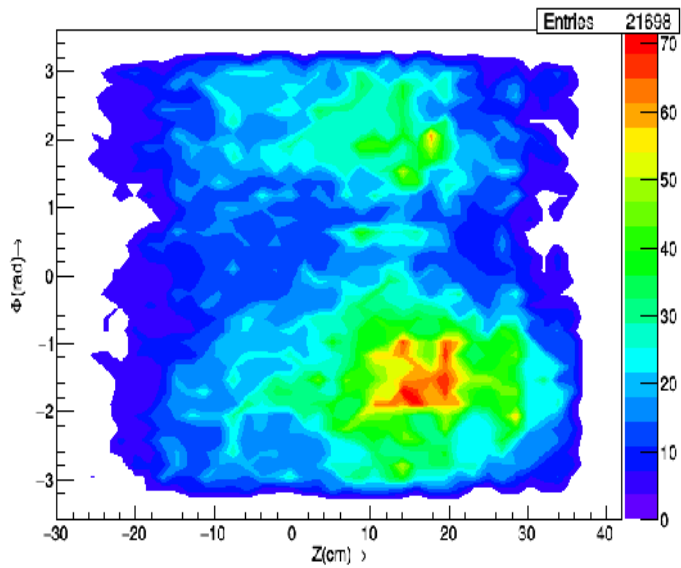


Touschek_HER

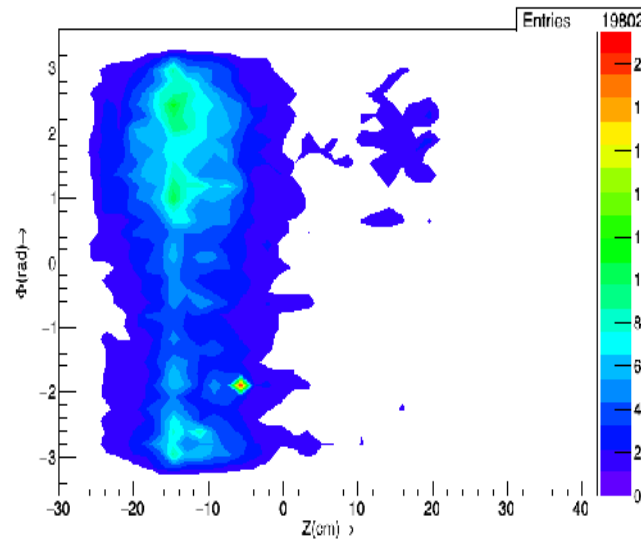


QED

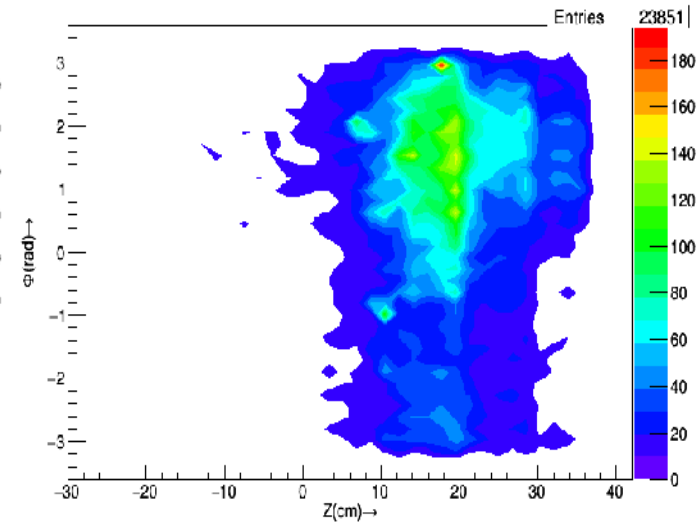
Neutron Flux by background type:($\Phi - z$) in layer 4



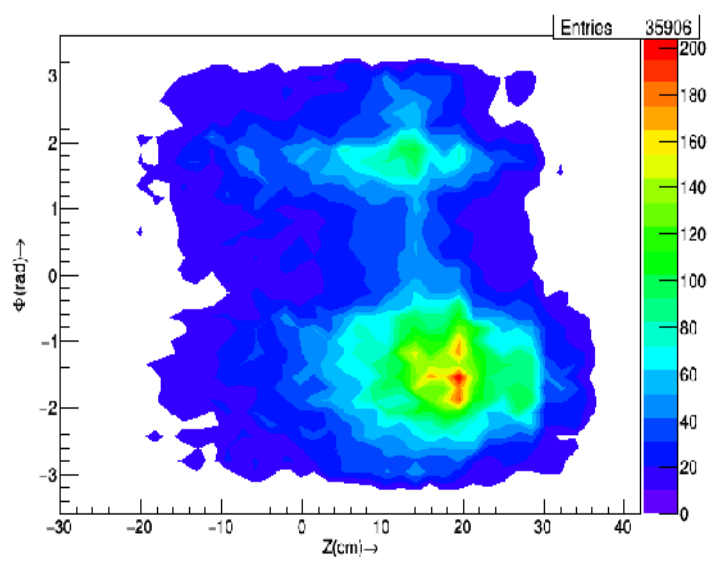
Coulomb_LER



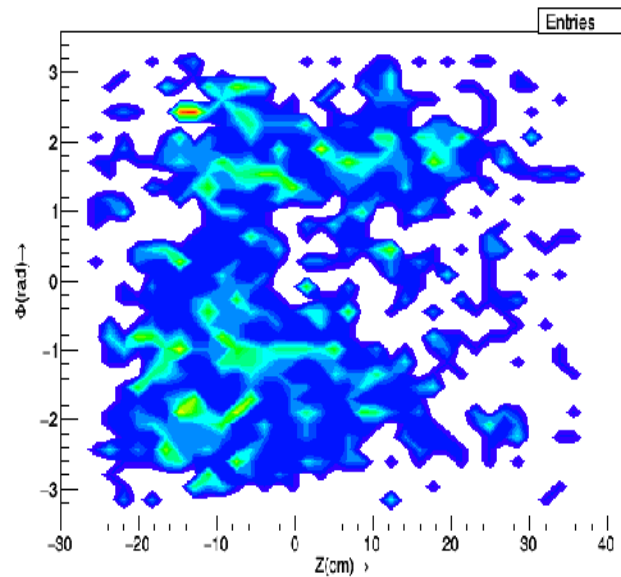
RBB_LER



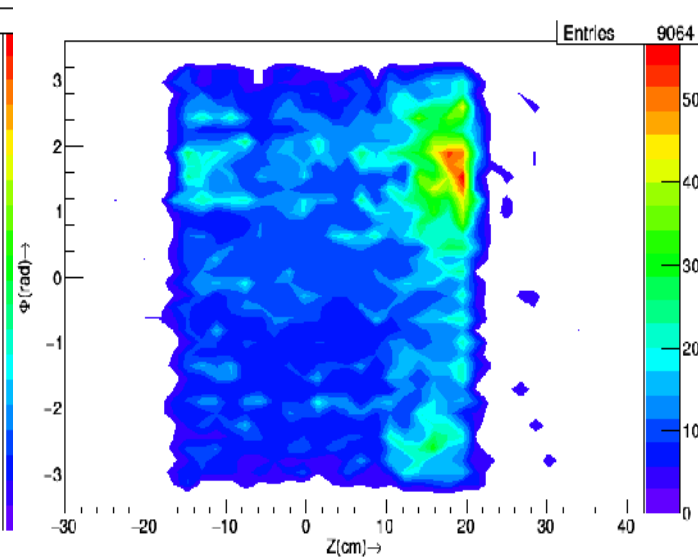
RBB_HER



Touschek_LER

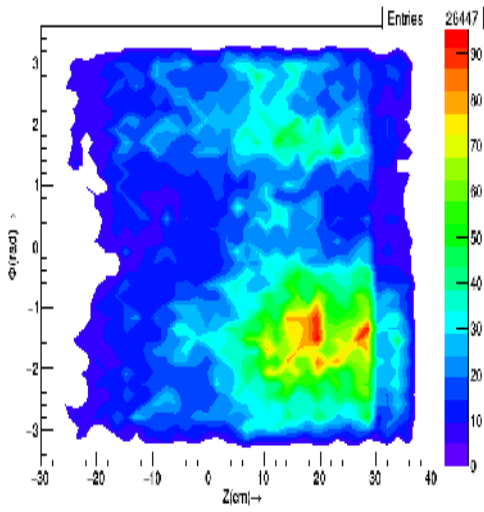


Touschek_HER

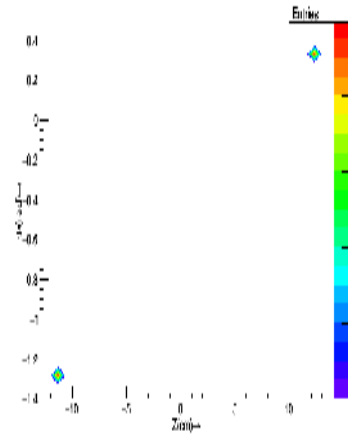


QED

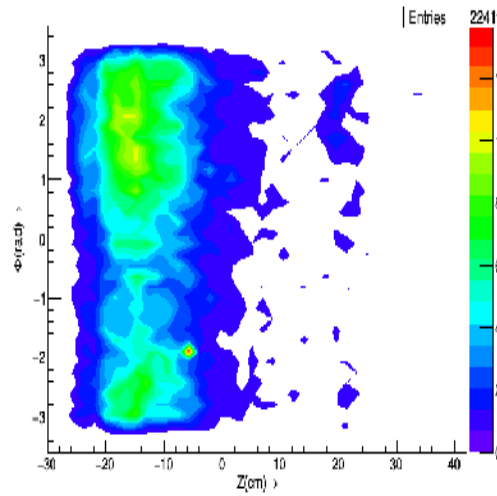
Neutron Flux by background type:($\Phi - z$) in layer 5



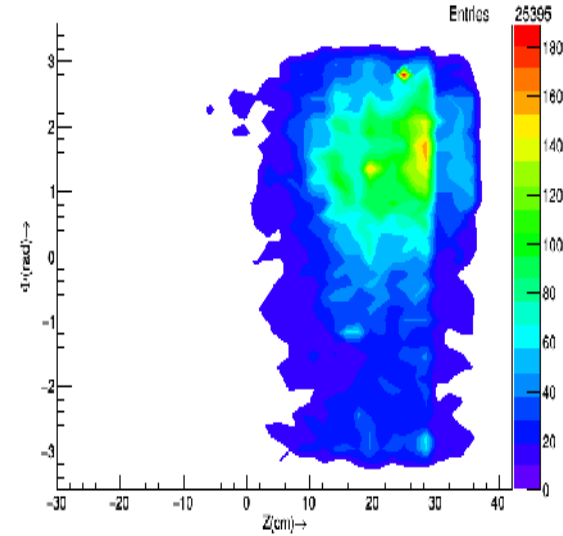
Coulomb_LER



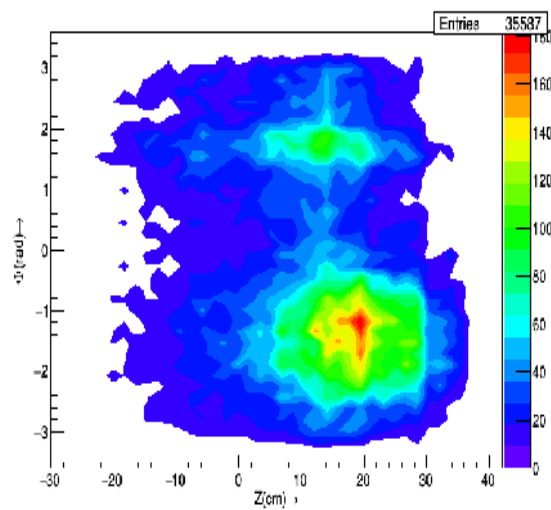
Coulomb_HER



RBB_LER

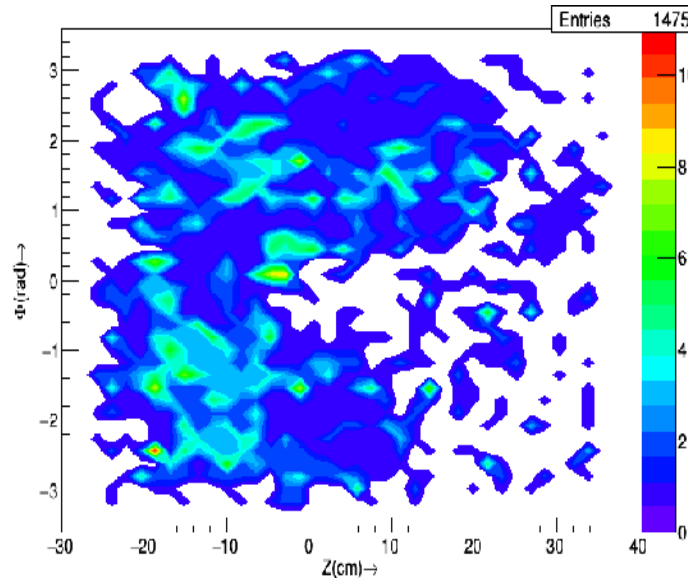


RBB_HER

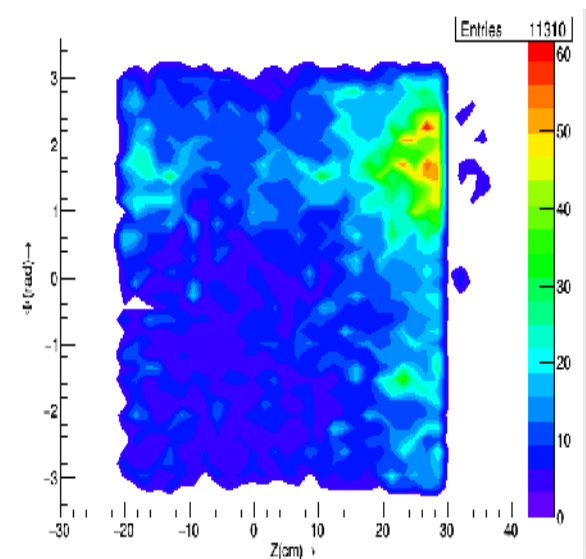


22/01/15

Touschek_LER

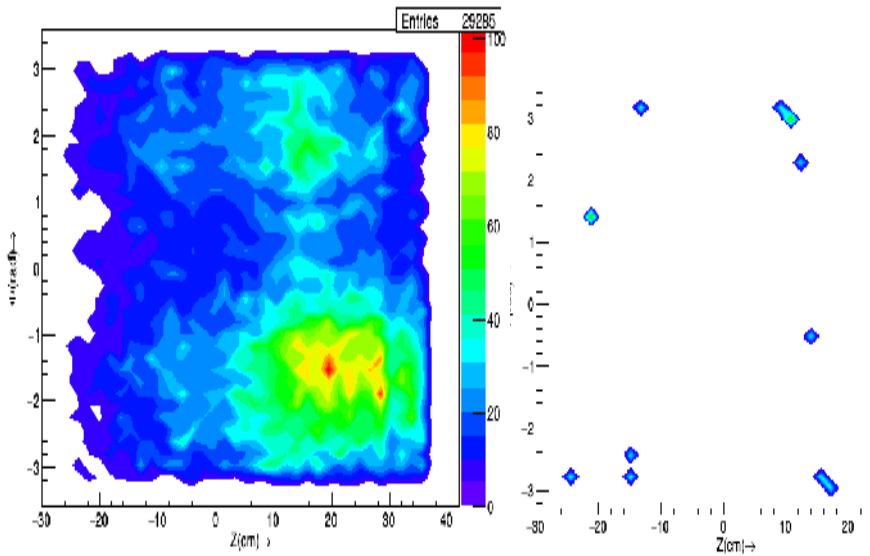


Touschek_HER

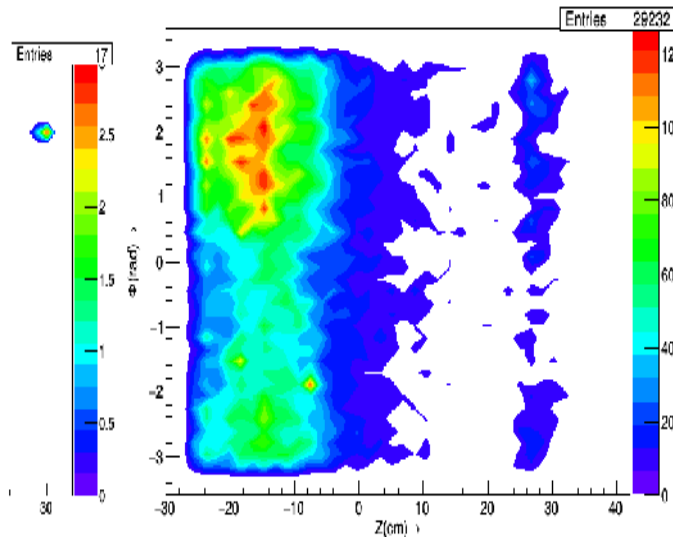


QED

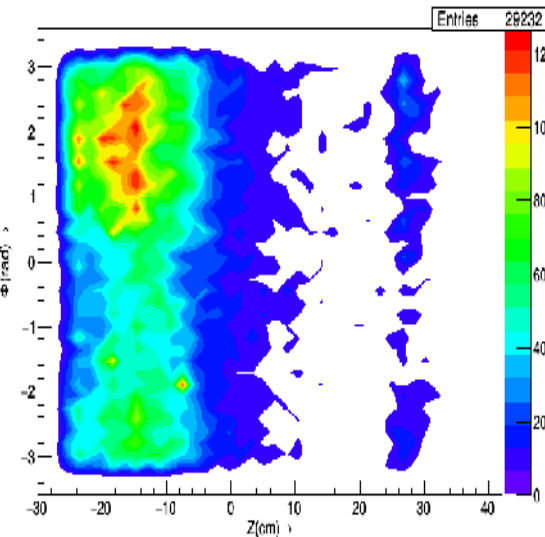
Neutron Flux by background type:($\Phi - z$) in layer 6



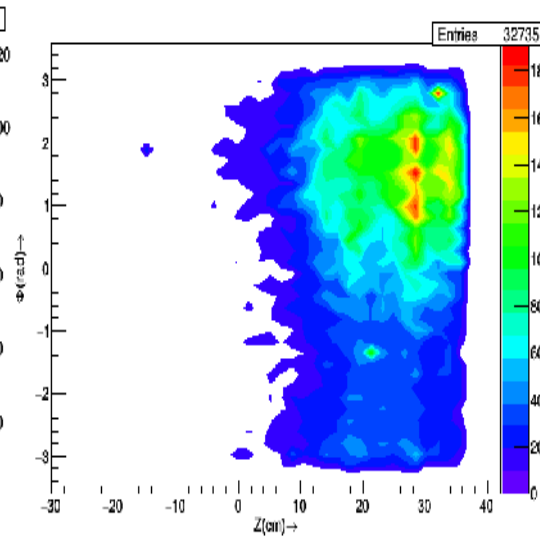
Coulomb_LER



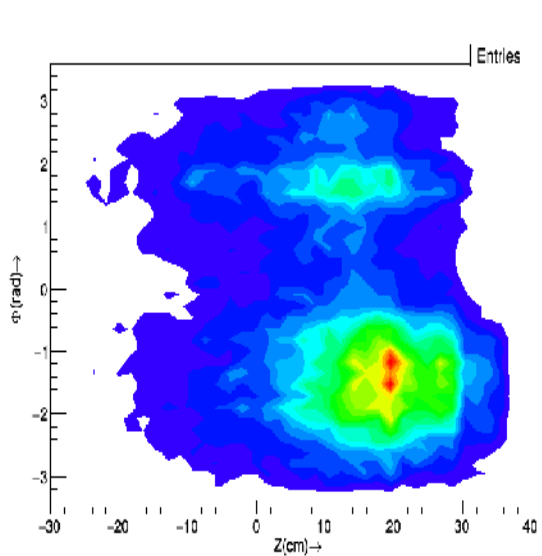
Coulomb_HER



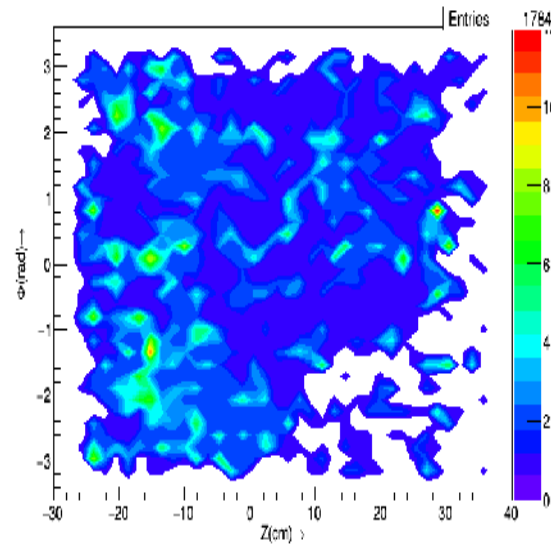
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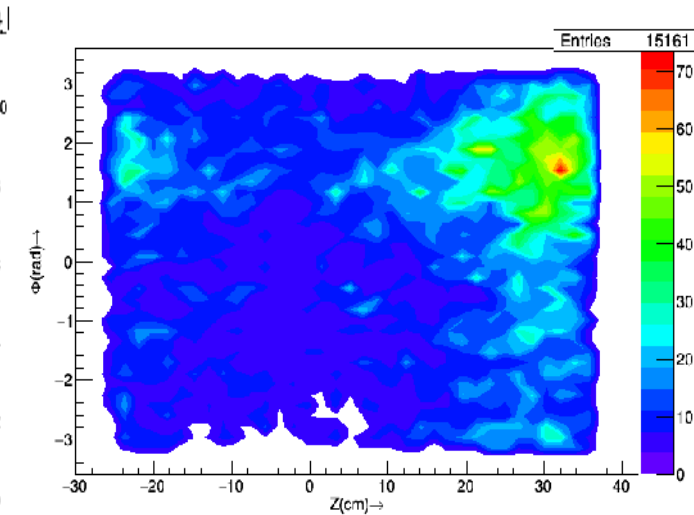
RBB_HER



Touschek_LER



Touschek_HER



QED

Summary:

- Made reduced copies of the background files from Nakayama-san's directory
- Got statistics and plotted from the background files
- QED Background contribution is high

Future Plan:

- Produce exposure (energy/cm²/s) and occupancy maps for the 4 SVD layers to visualize the distribution of background load in SVD
- Study the exposure of SVD chips and diamond radiation sensors in SVD
- Error estimation by layer