

Optics Status Update

Chao Gu

Simulation vs Data

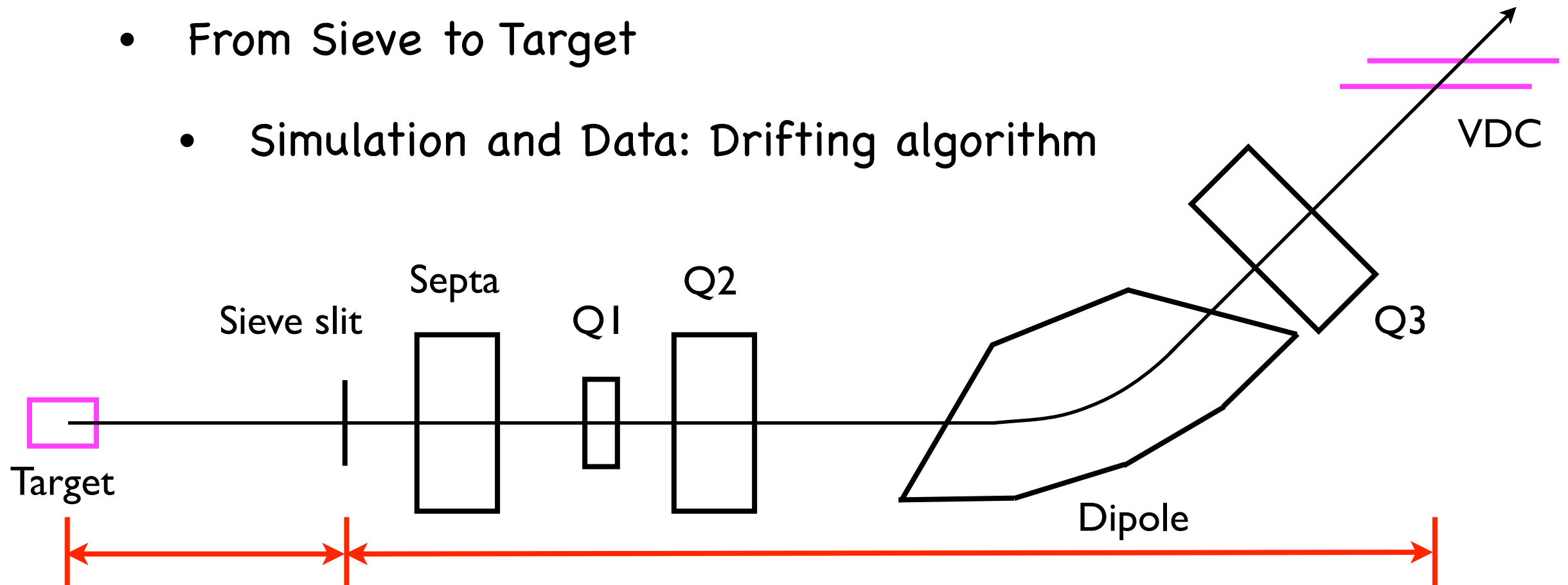
- First check with optics data:
 - Check whether the geometry is correct or not
 - Some deviation was found in the optics meeting
 - Check if the energy loss model matches with data
 - Wait for Jie's response

Simulation vs Data

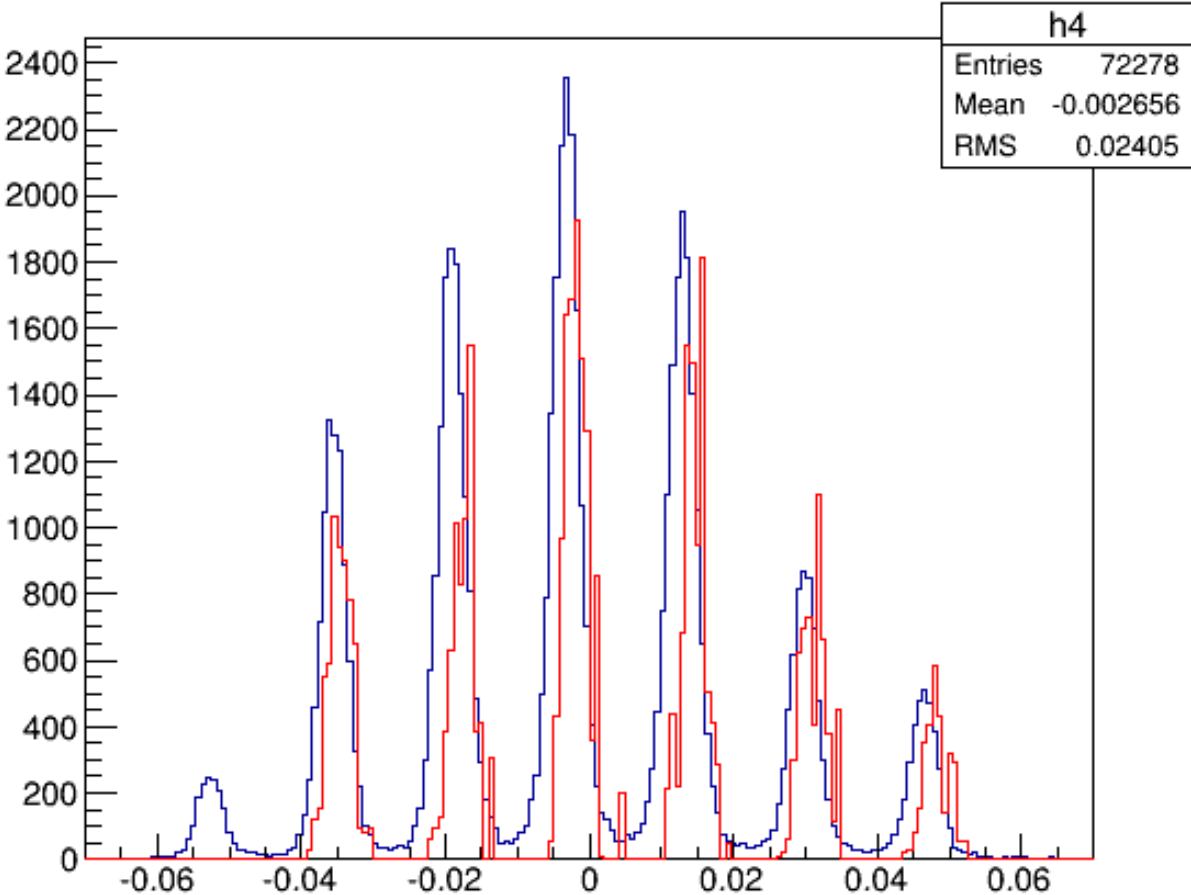
- BPM simulation:
 - Simulation also simulated the behavior of the BPM
 - The positions of 2 BPMs are hard-coded into the simulation
 - The drifting algorithm is used to backward drift the incoming electrons to the BPMs to simulate the readout of BPMA and BPMb
 - The BPM readout at $z=0$ is calculated by the same functions used in the BPM package provided by Pengjia

Simulation vs Data

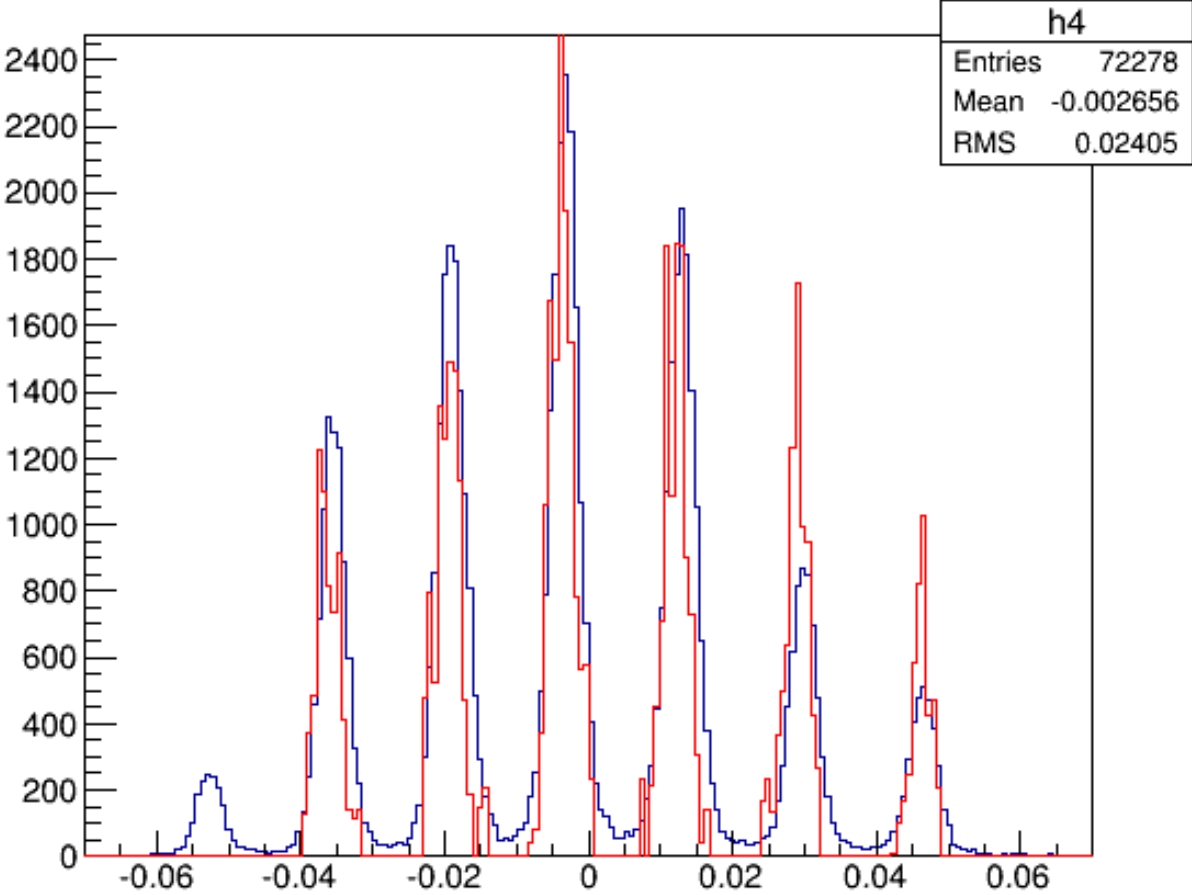
- 2 Step:
 - From FP to Sieve
 - Simulation: SNAKE
 - Data: optics matrix
 - From Sieve to Target
 - Simulation and Data: Drifting algorithm



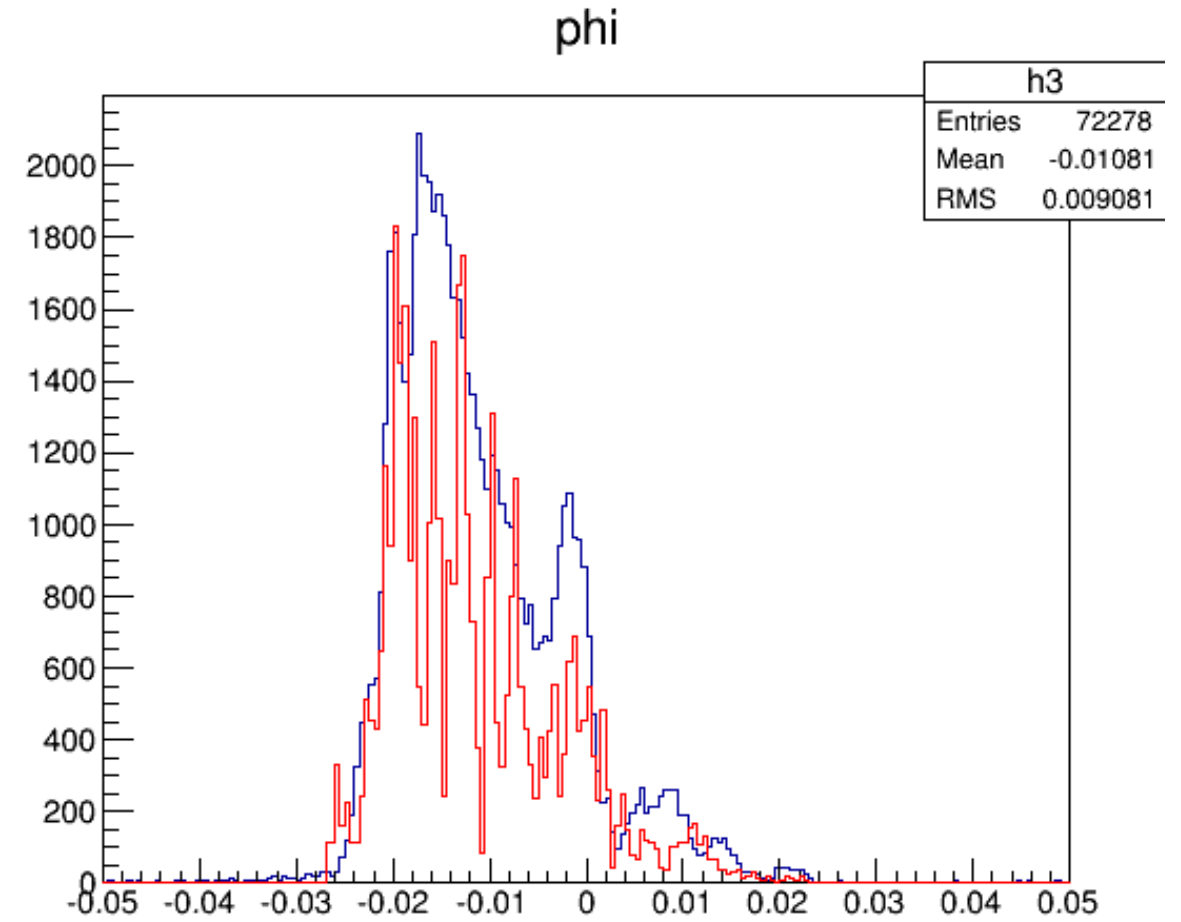
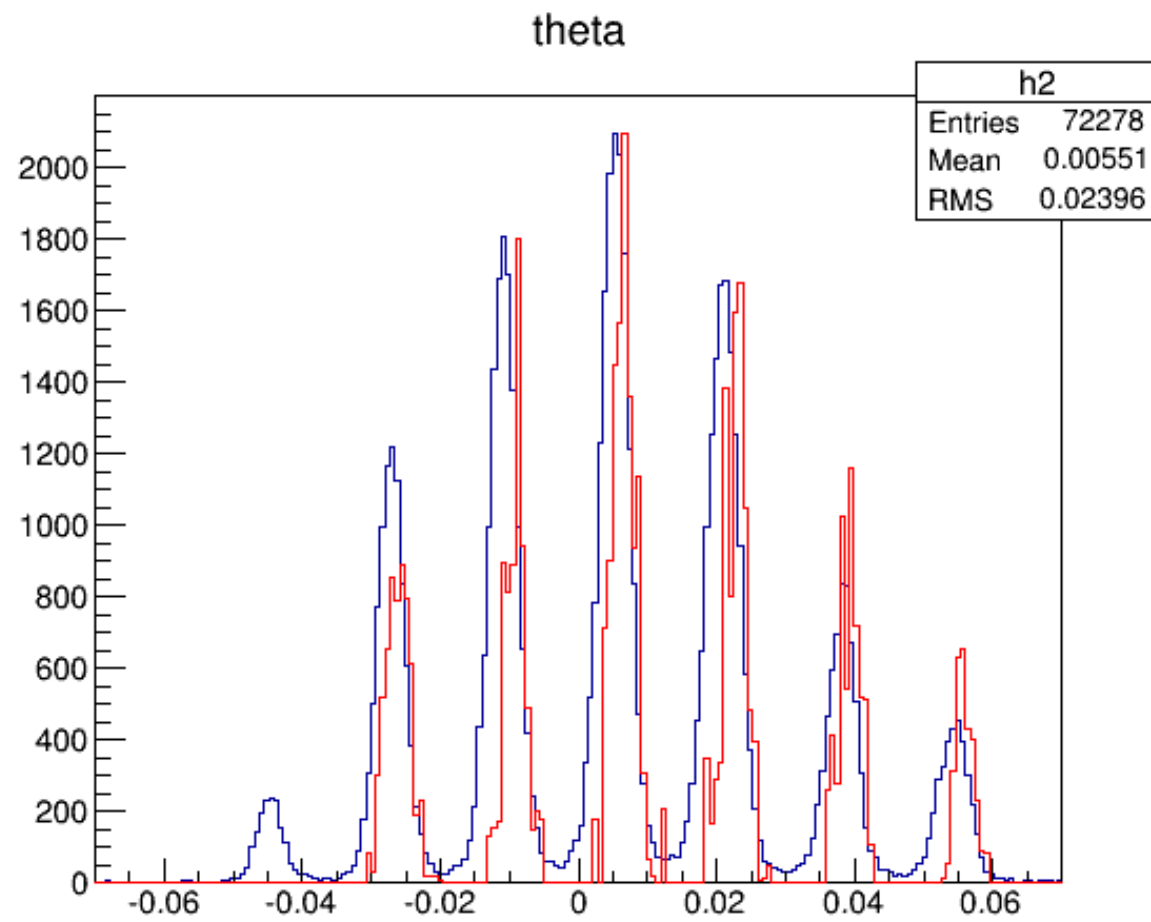
Theta distribution before drifting
in the target field
(Before)



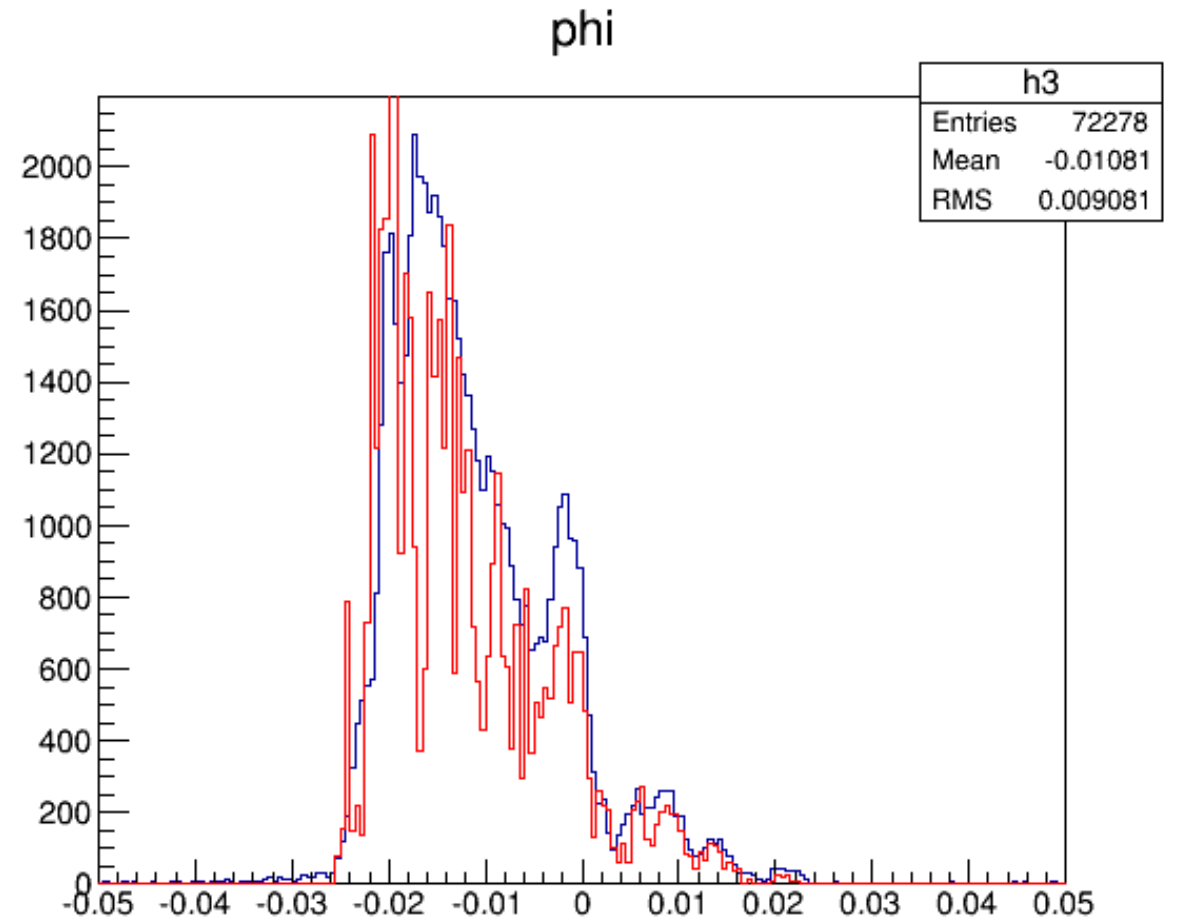
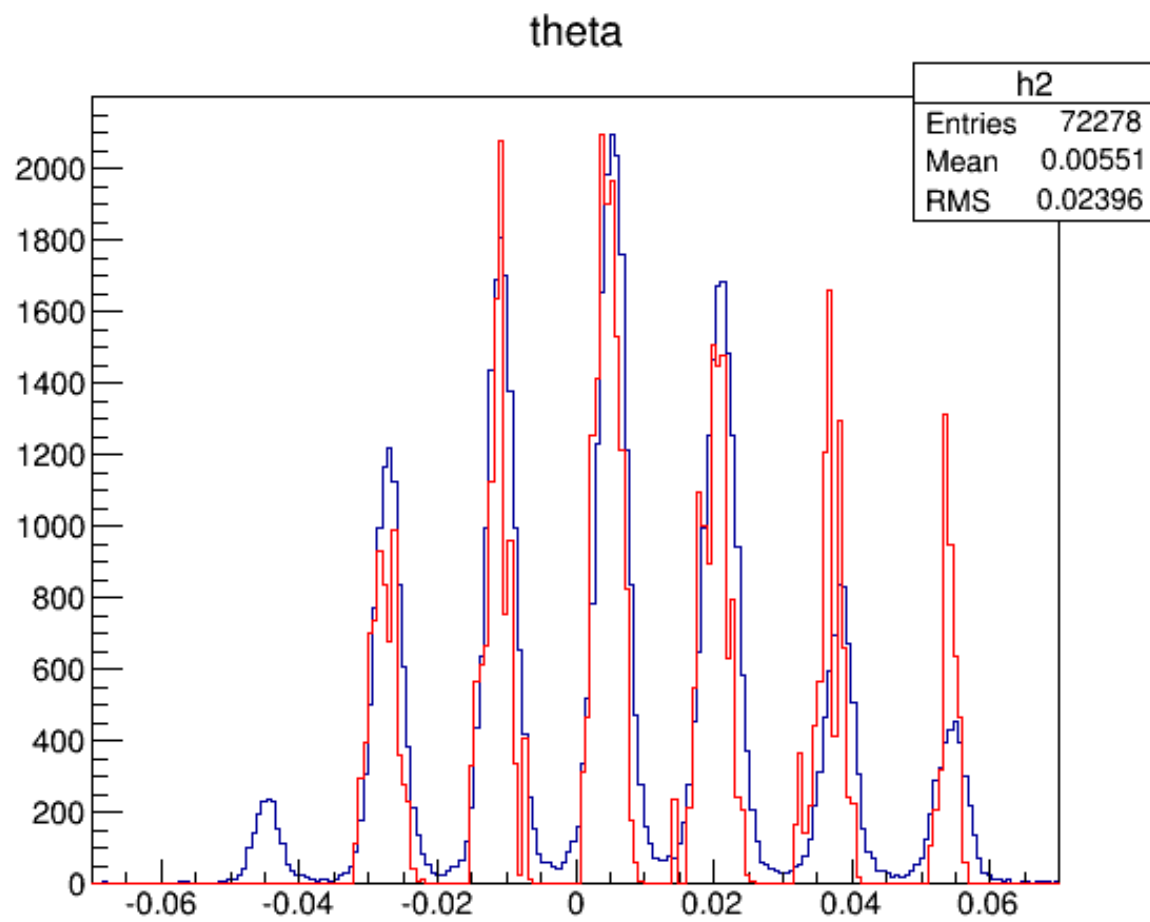
Theta distribution before drifting
in the target field
(Fixed BPM)



Theta distribution after drifting in the target field (Before)



Theta distribution after drifting in the target field (Fixed BPM)



Simulation vs Data

- The geometry between the simulation and the data matched for the optics
- Test for each kinematics setting (on-going)
- Need to check with Pengjia for the BPM problem, but this is not critical