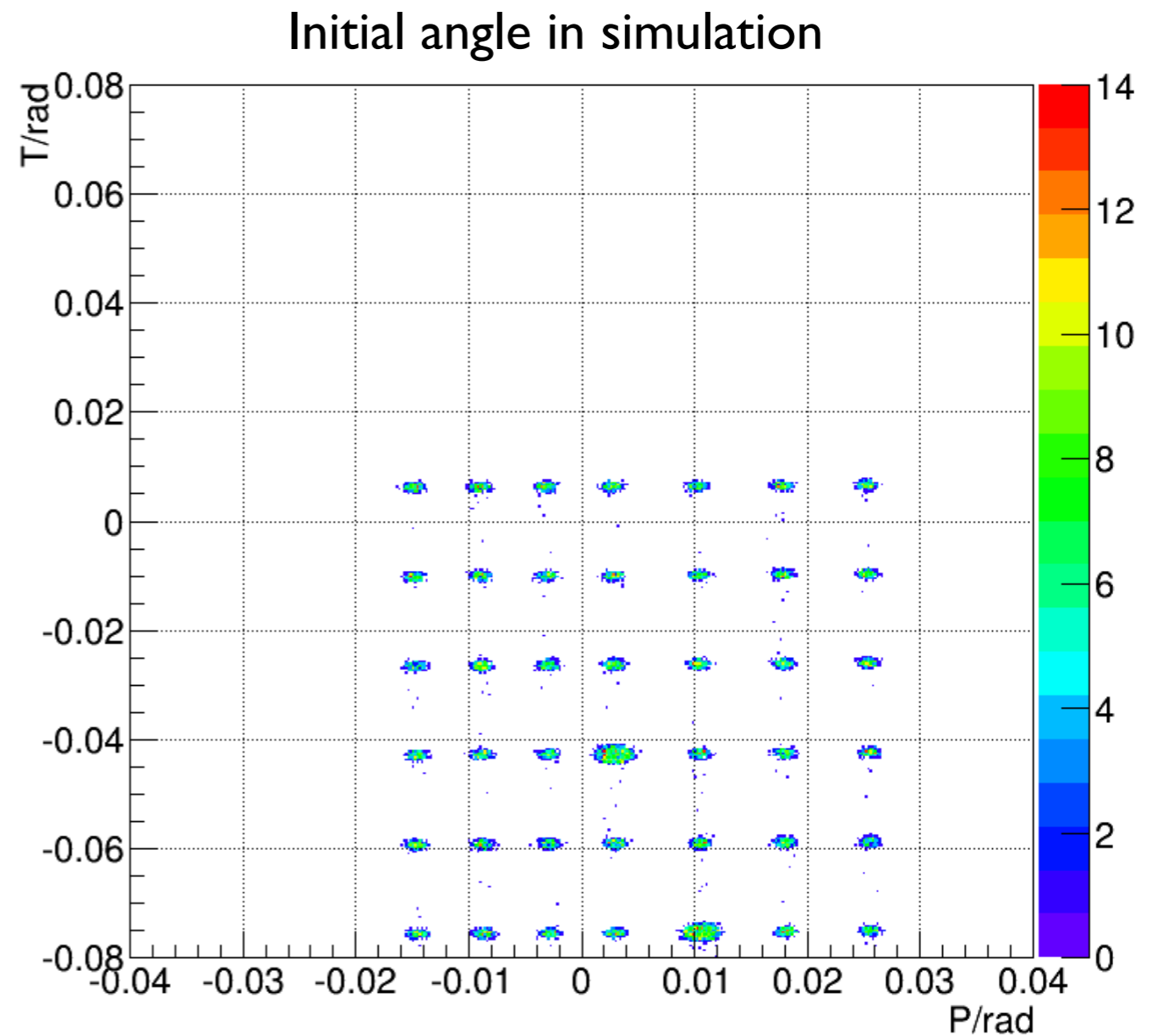


Simulation Package Update

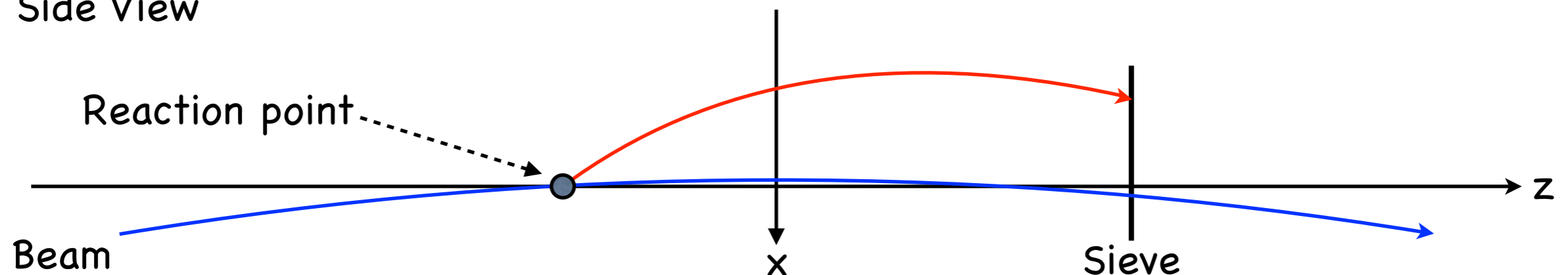
- Use simulation to decide real theta and phi
 - Set the beam position to the average value of BPM readout
 - For each sieve hole, calculate the average value of theta and phi
- In this case, real theta and phi are not decided event by event, but at a run level
- Previous optics package calculate real theta and phi event by event to include the influence from the difference of the beam position



Simulation Package Update

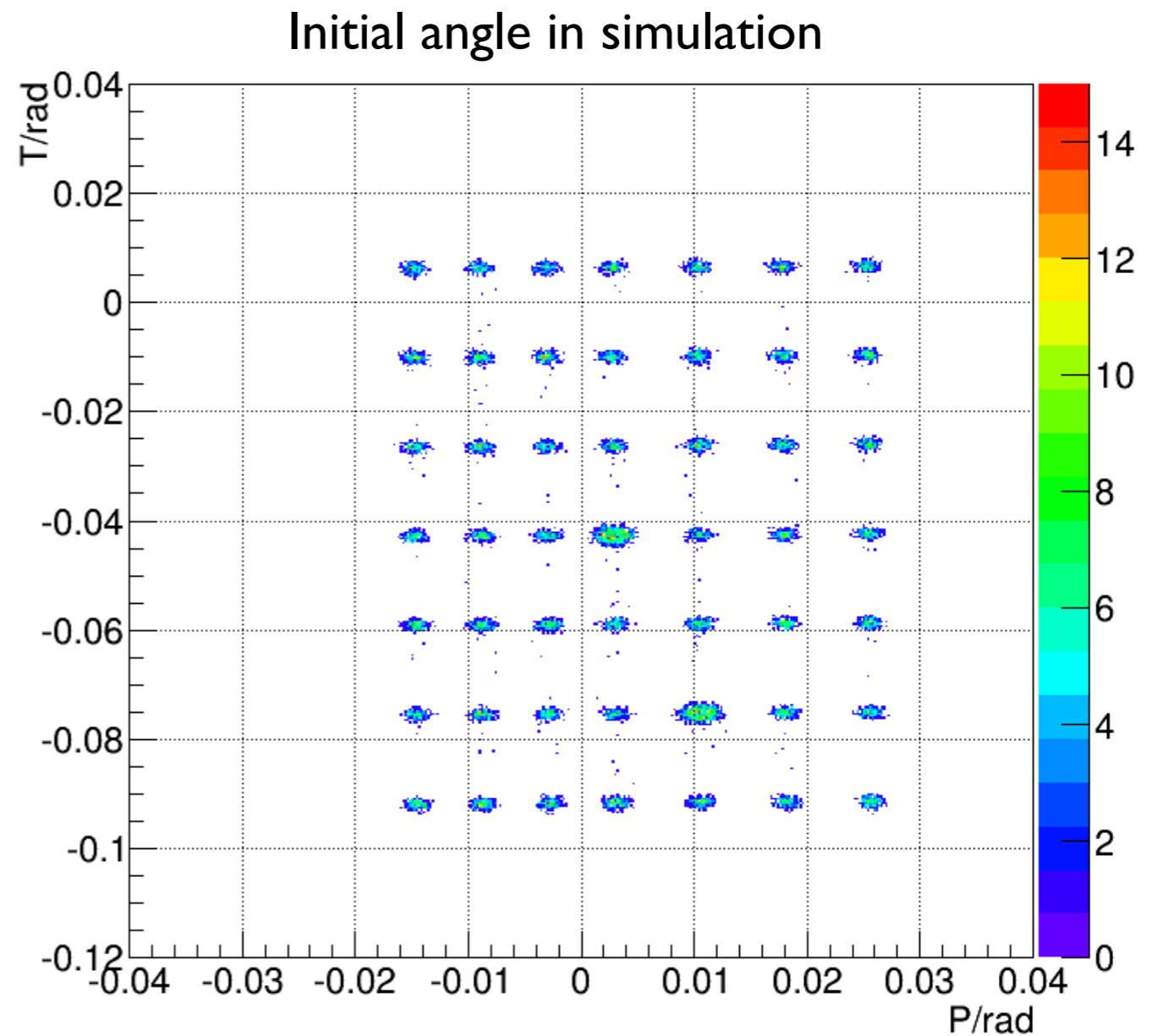
- It is possible to decide the real theta and phi event by event with target field:
 - We know the position of reaction point and sieve hole and the momentum of the electron (elastic scattering)
 - 3 condition is enough to solve the equations of motion and decide the trajectory
 - Use Bisection method to find the trajectory: the real theta and phi of the scattered electron

Side View



Simulation Package Update

- The simulation package is modified to do this bisection search
 - First decide the average energy loss of the run
 - Do the bisection search with fixed energy loss
- Simulation package can directly read the data file for optics calibration and decide the real theta and phi for each event
- It will be easier to do the calibration for different dp settings with this update



Optics Status

- TODO:
 - Finish the calibration of the first setting with the target field