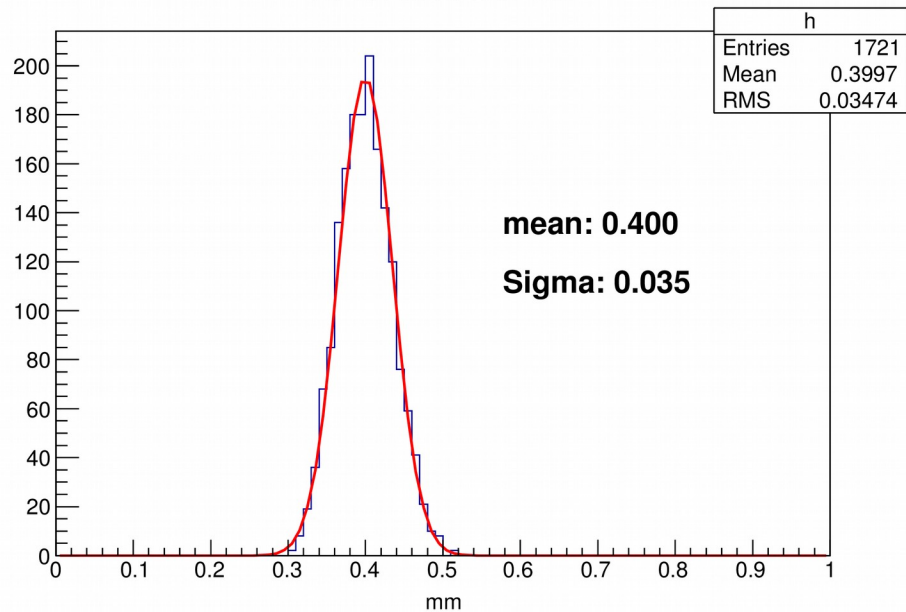
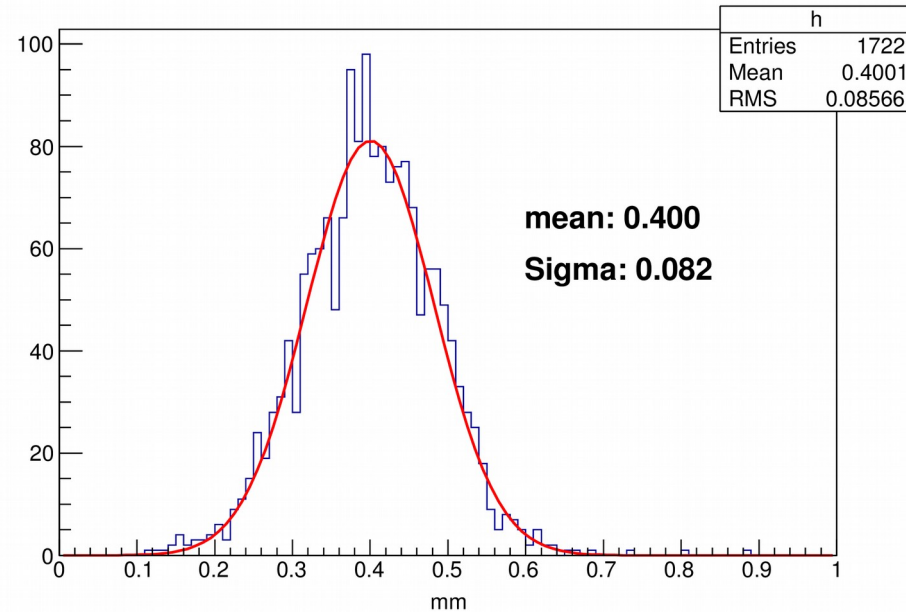


BPM monitors:

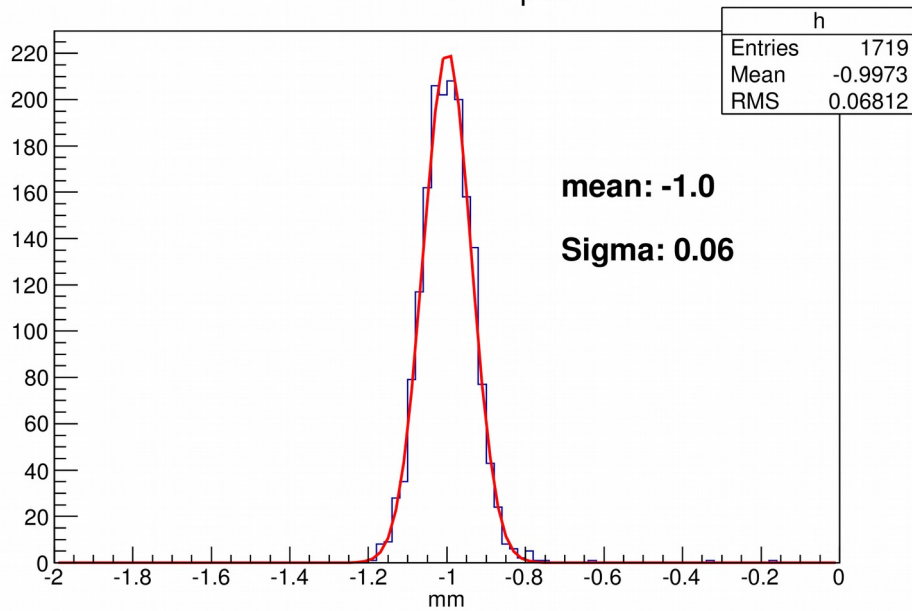
BPM 2C24A X POS



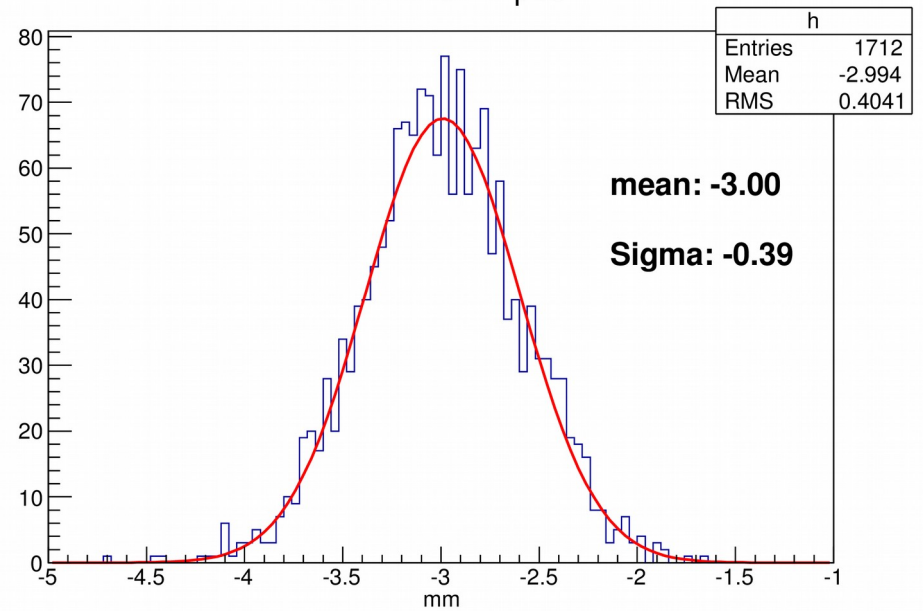
BPM 2C24A Y POS



BPM 2H01 X pos

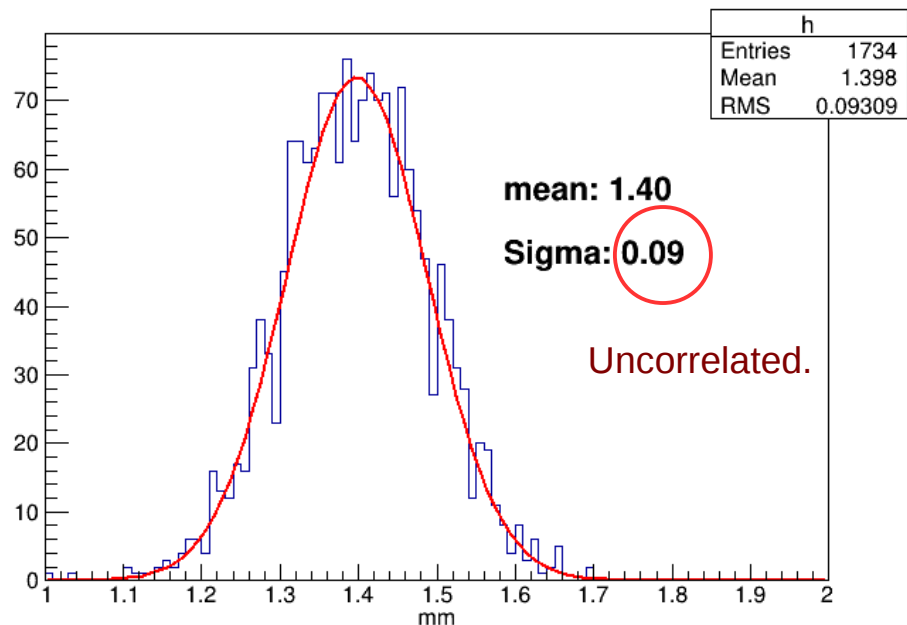


BPM 2H01 Y pos

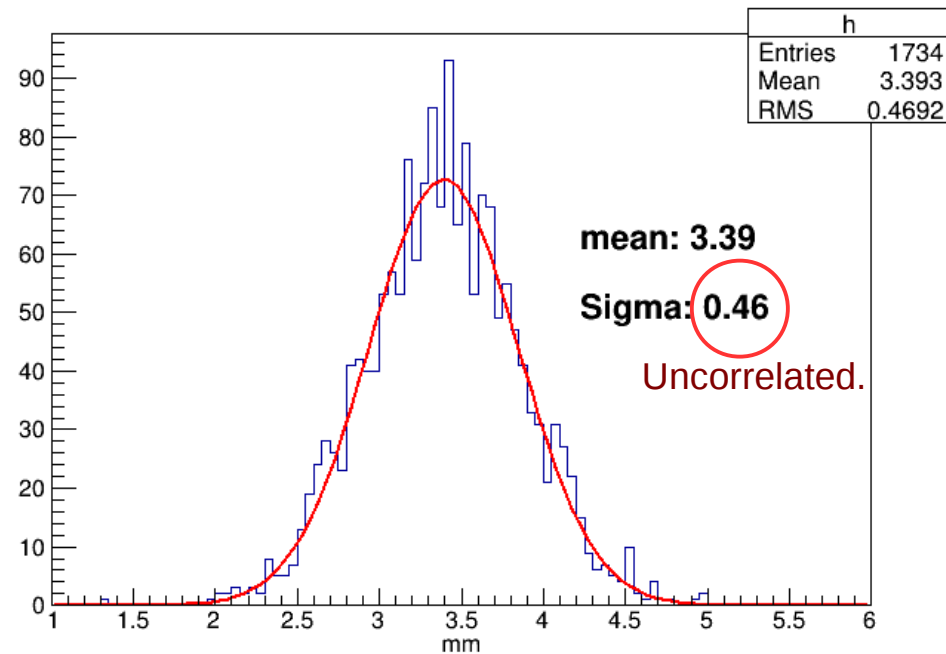


BPM monitors:

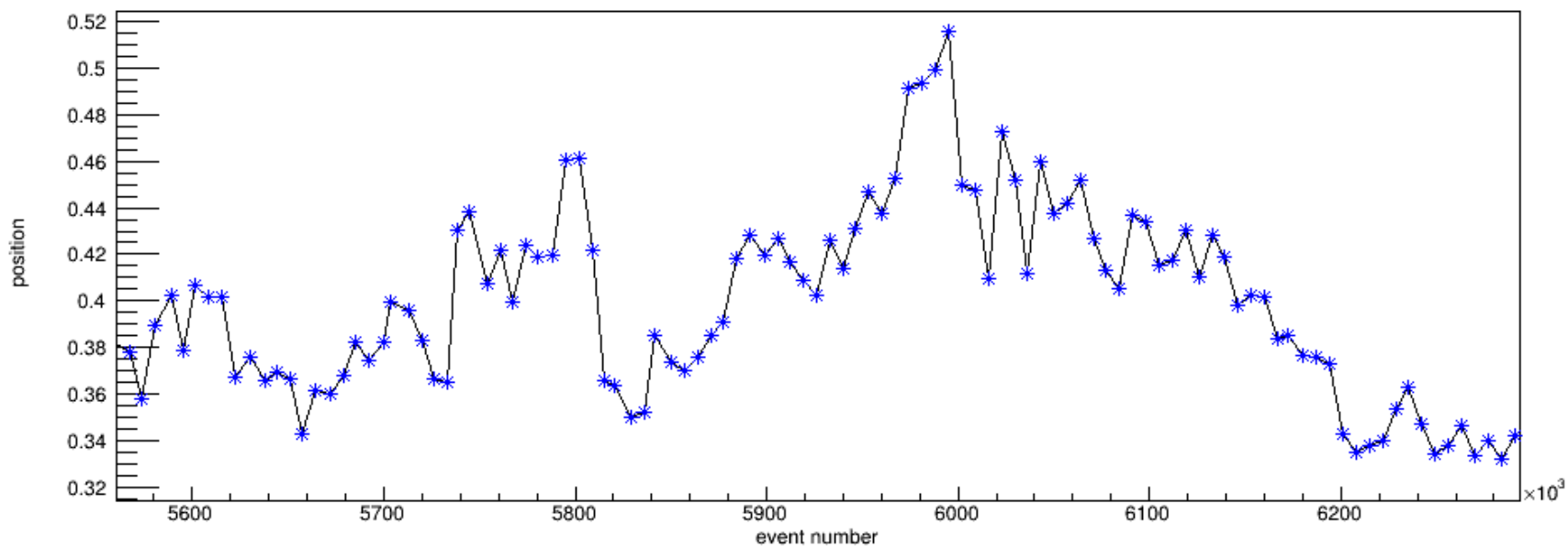
BPM X Diff



BPM Y Diff



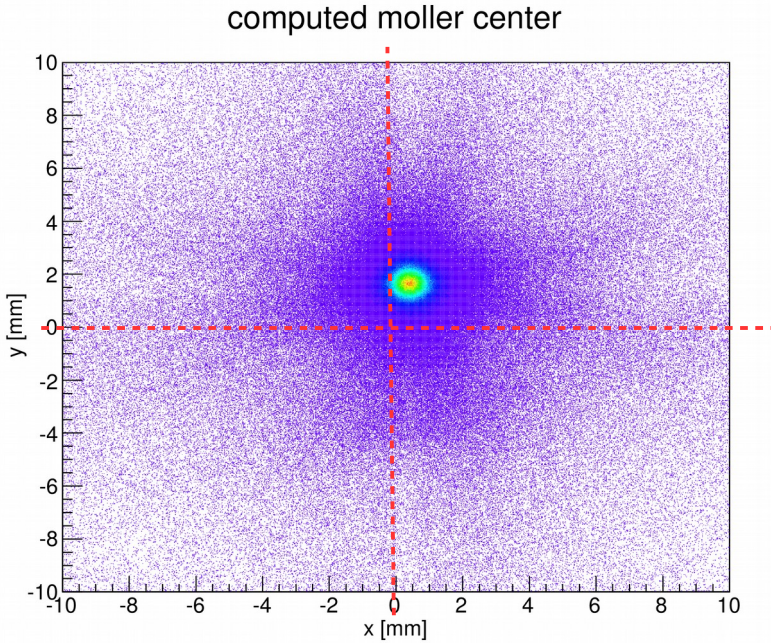
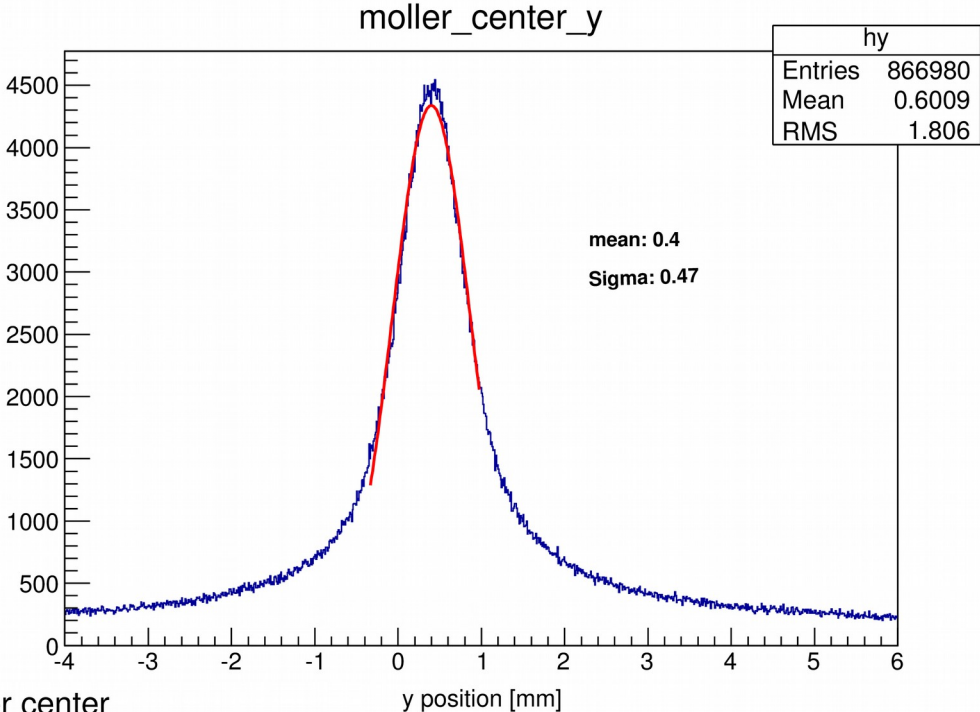
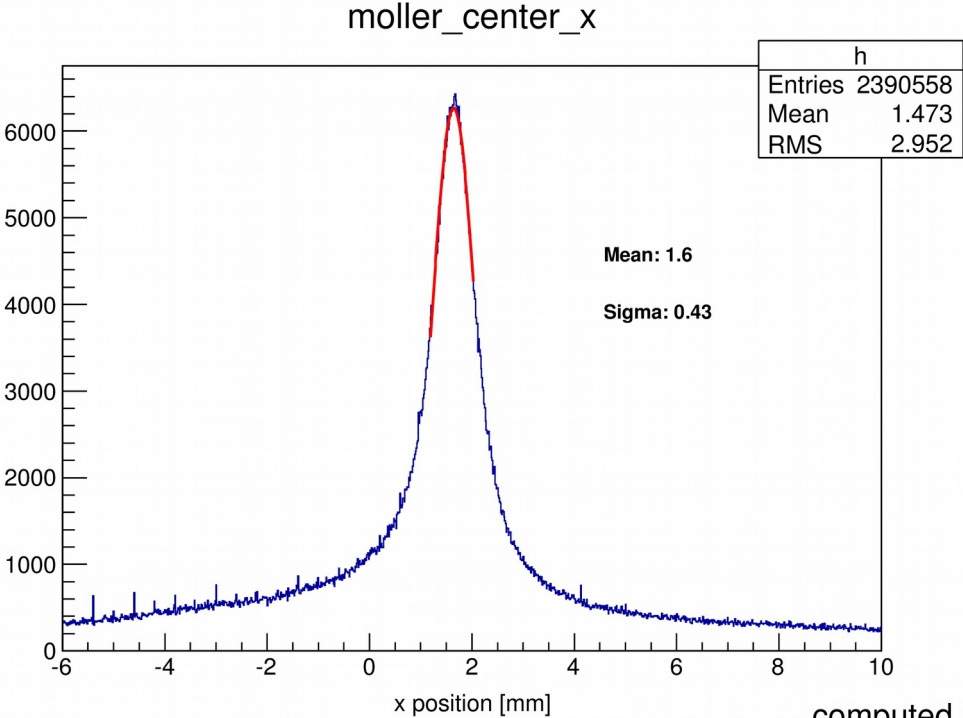
Y Pos : run number



BPM monitors:

- 1), uncertainty: 35 micron ~ 400 micron.
- 2), roughly one event per every 8k physics event.
- 3), two BPM monitors can be treated as uncorrelated.
- 4), calibrate beam line to BPM monitor...
Every 8k events update a new beam line position...

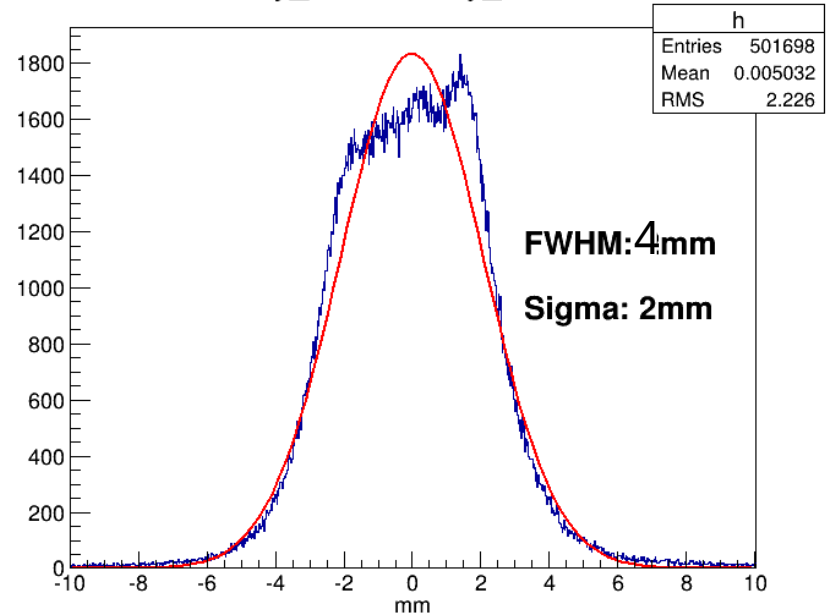
GEM Position uncertainties from moller:



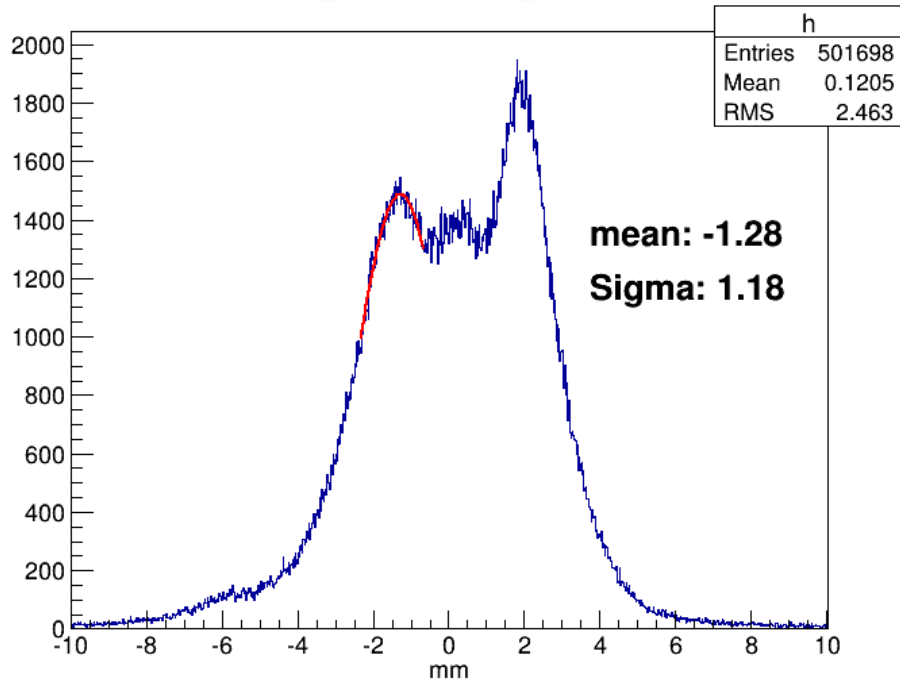
GEM Position uncertainties from moller:

- Step 1), Use the above computed center as origin.
- Step 2), get scatt. angle for electron 1 (z from survey).
- Step 3), get scatt. energy for electron 1, then subtract this from beam energy to get scatt. energy for electron 2.
- Step 4), use energy for e2 → scatt. angle for e2.
- Step 5), get position for e2.

y_measure - y_calc



x_measure - x_calc



x_measure - x_calc

