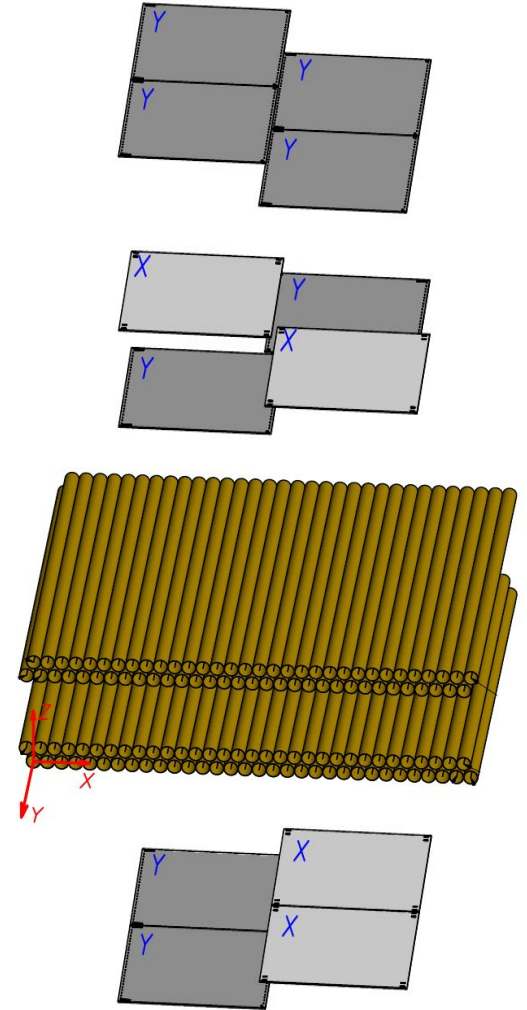


Status of MiniSPD

23.03.2021

Alignment process

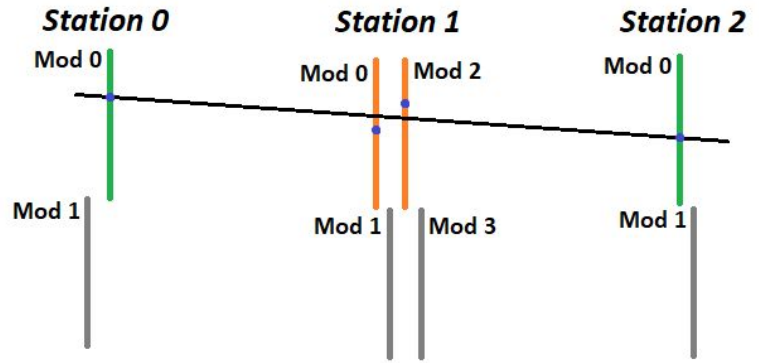
- Only X coordinate was taken into account.
- Only clusters of size 1 were included in alignment process.



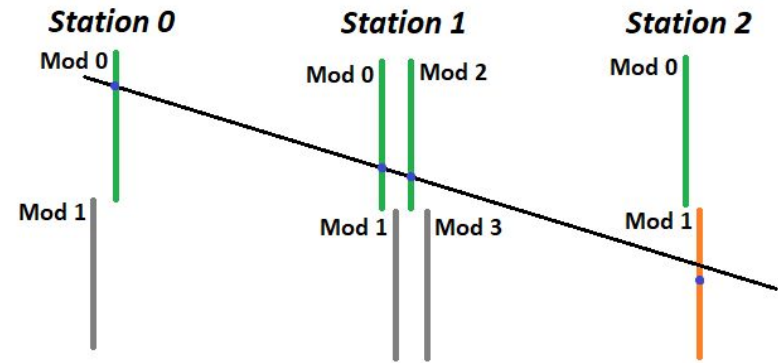
Alignment process

- fitted track;
- hit;
- assumingly aligned modules;
- modules to align;
- inactive modules.

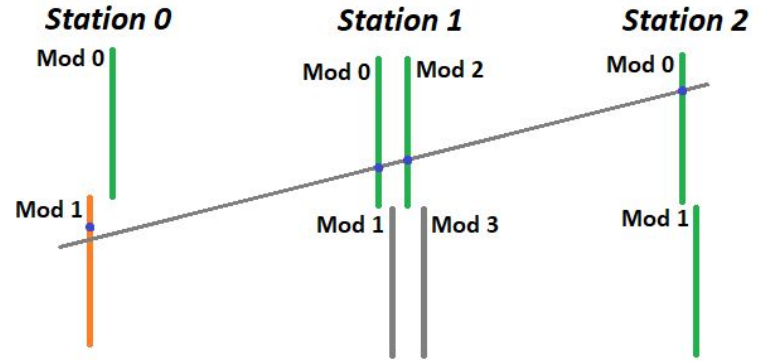
STAGE 1



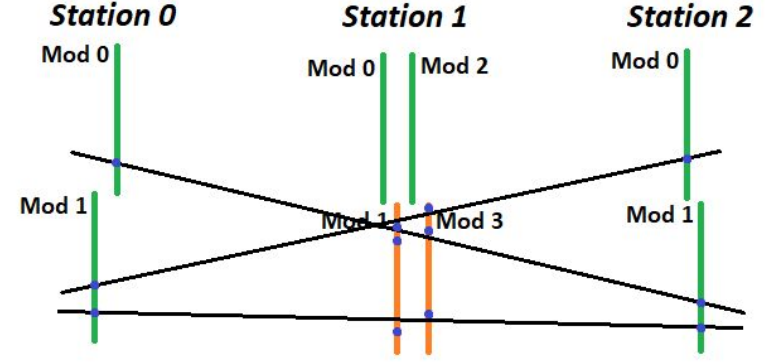
STAGE 2



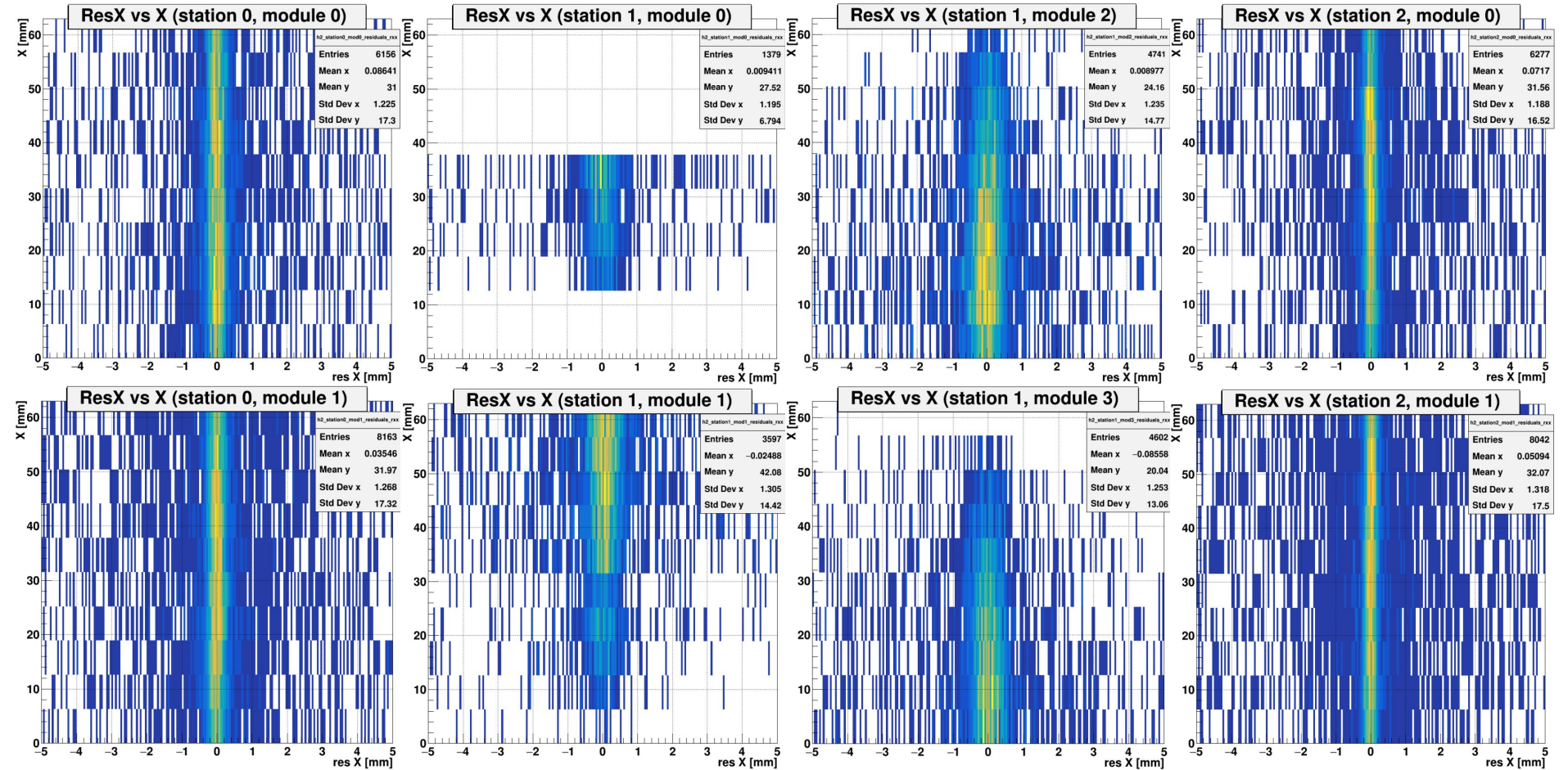
STAGE 3



STAGE 4

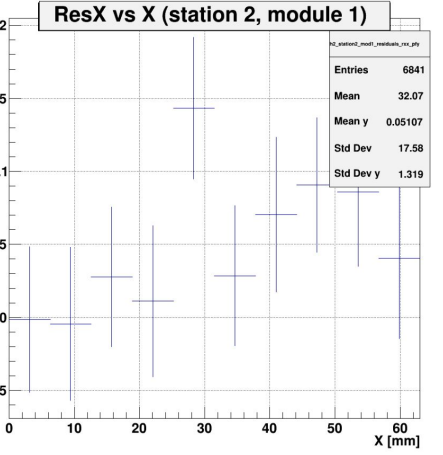
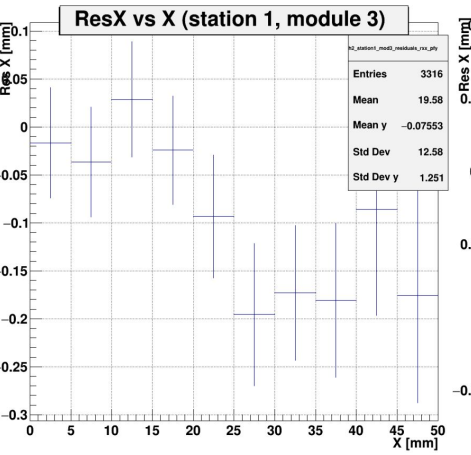
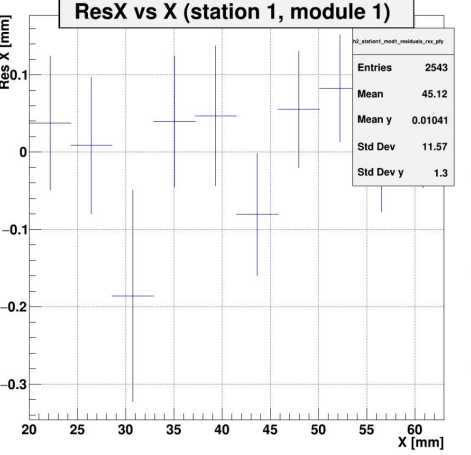
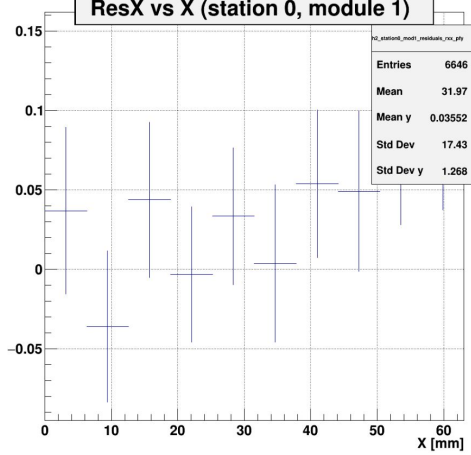
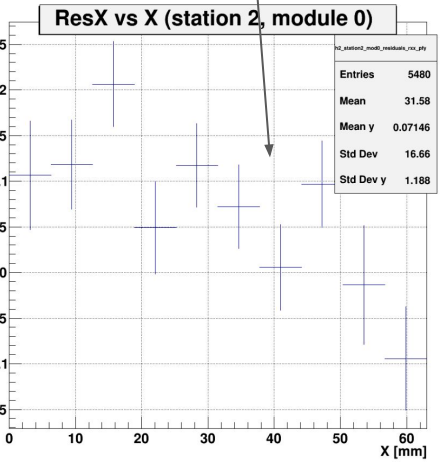
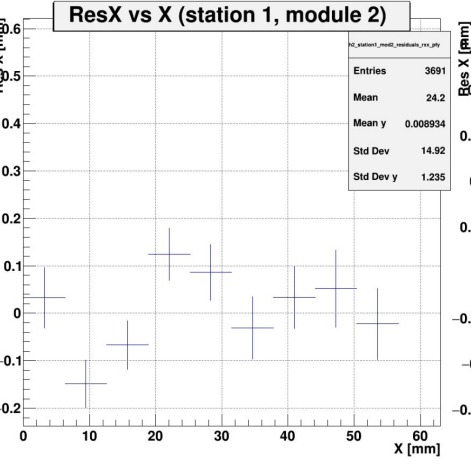
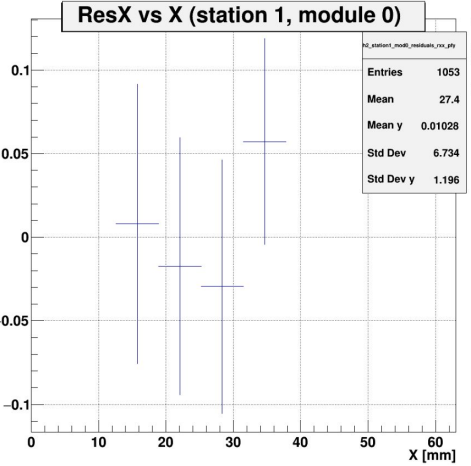
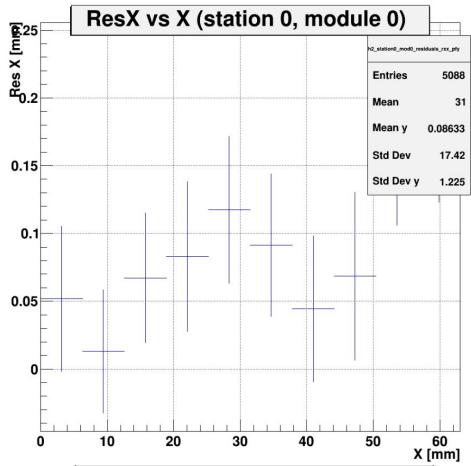


ResX vs X

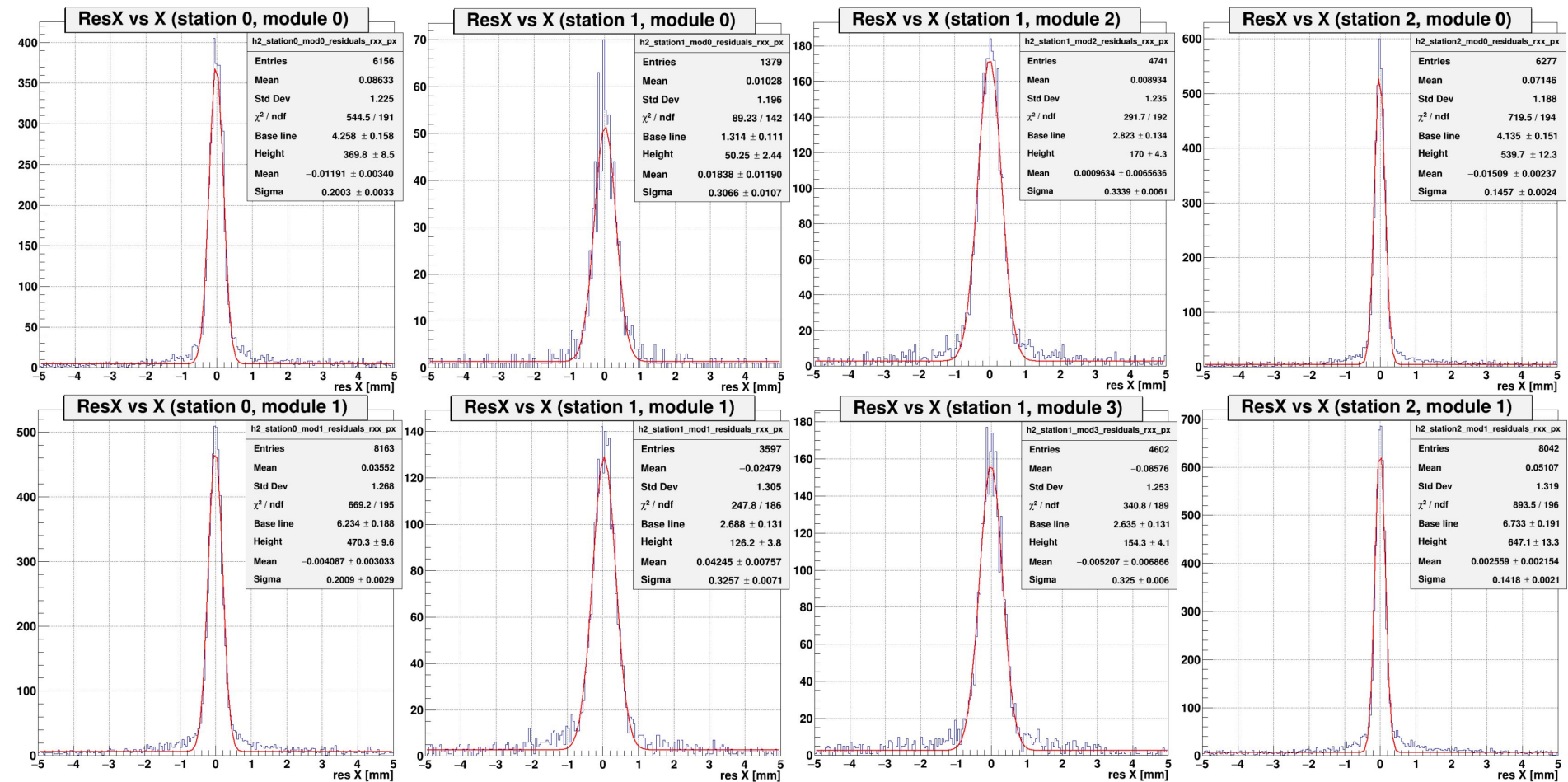


ResX vs X (profile)

Rotation?



Residuals X (projection)



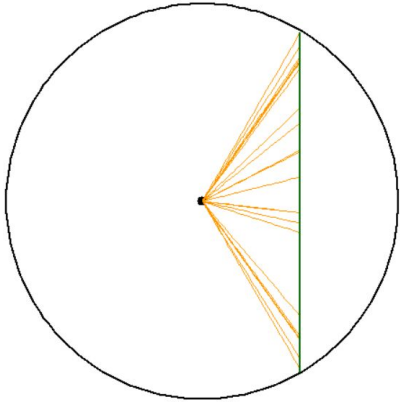
Drift time simulation

using Garfield++

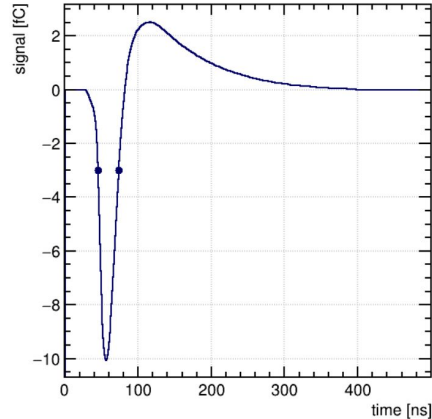
TDC signal (Garfield++ Monte-Carlo)

- Gas: Ar 70%, CO₂ 30%, 20°C, 1 atm;
- Wire: diameter 30 μm, voltage 1625V;
- Tube diameter 6 mm;
- No magnetic field;
- Threshold = -3 fC;
- $R_{\text{track}} = 1.5$ mm (at this slide)

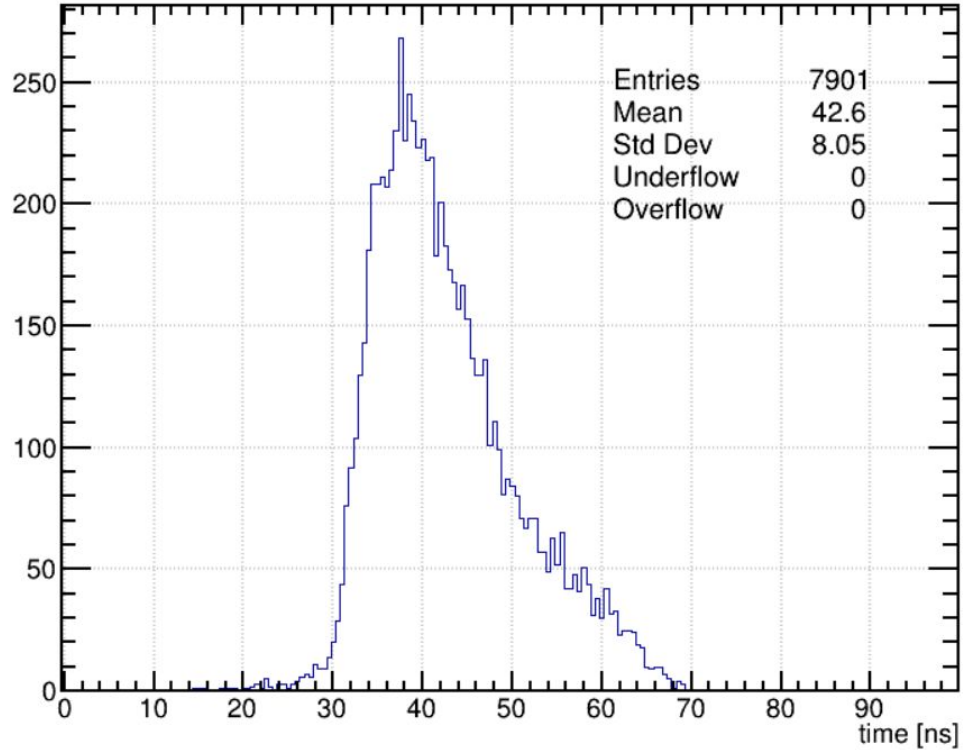
Drift



Signal profile



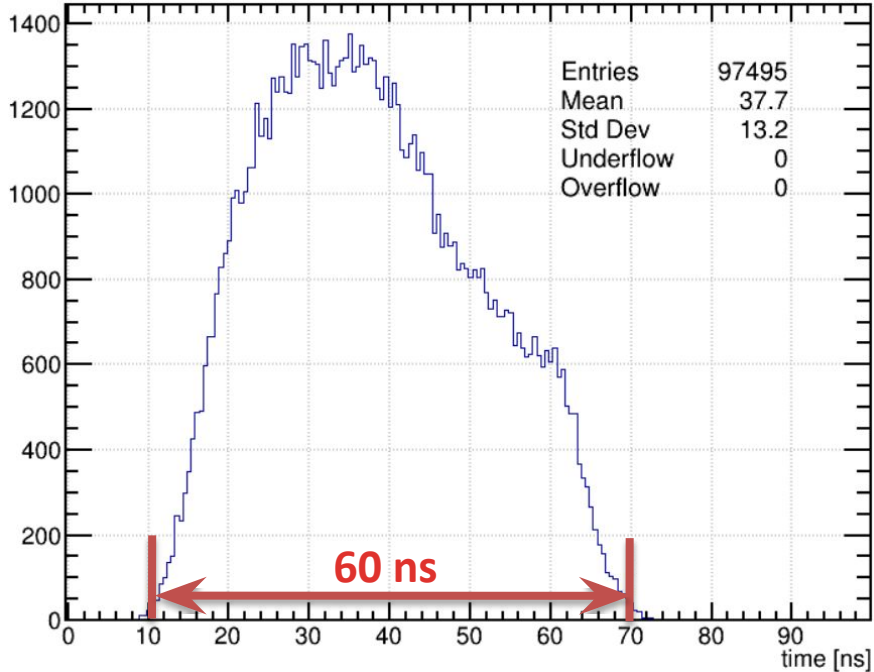
Example of drift time distribution



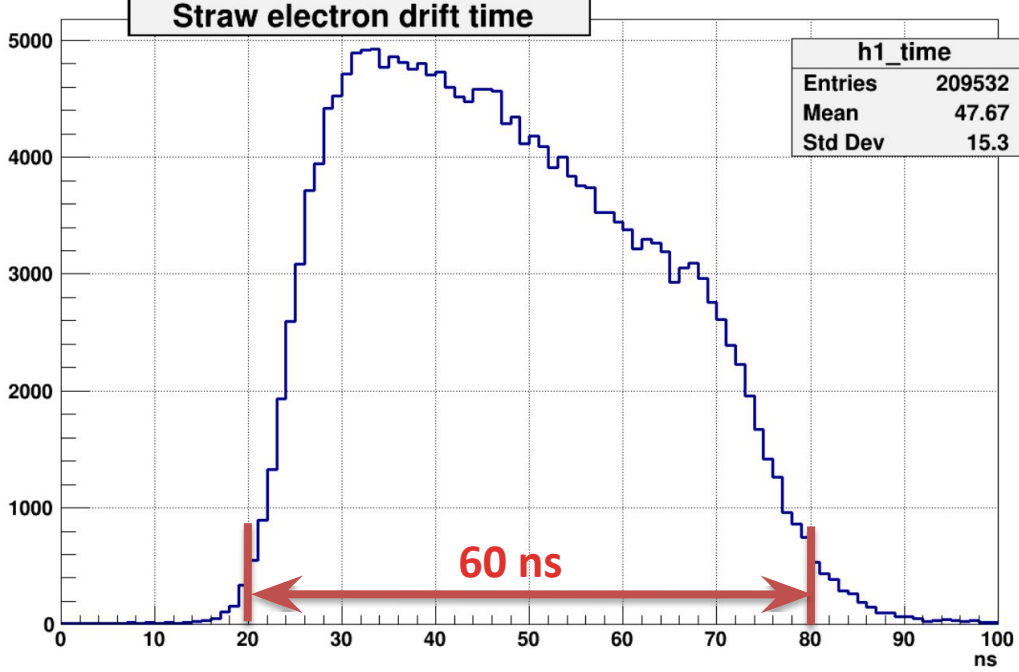
Electron drift time

Tracks are uniformly distributed along X axis.

Garfield++

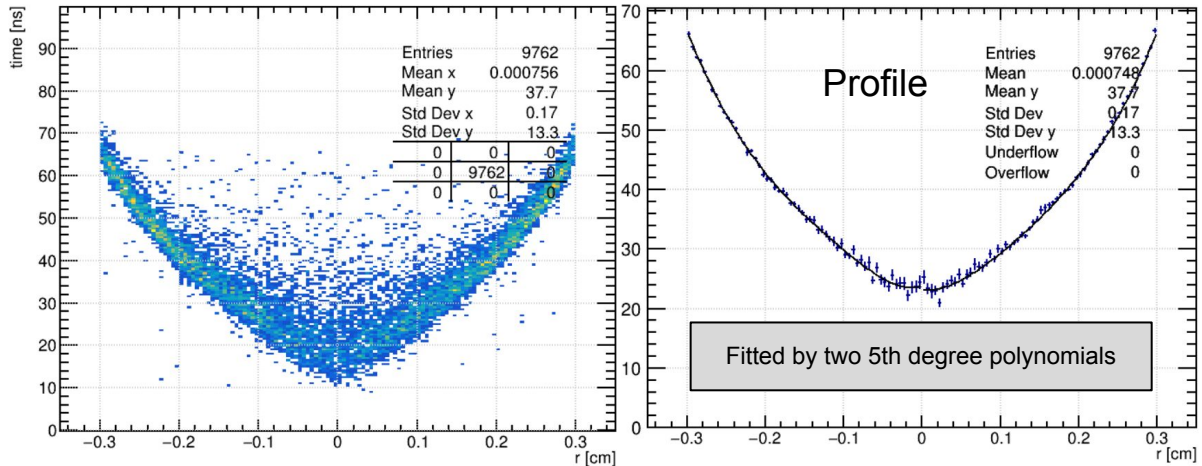


MiniSPD data

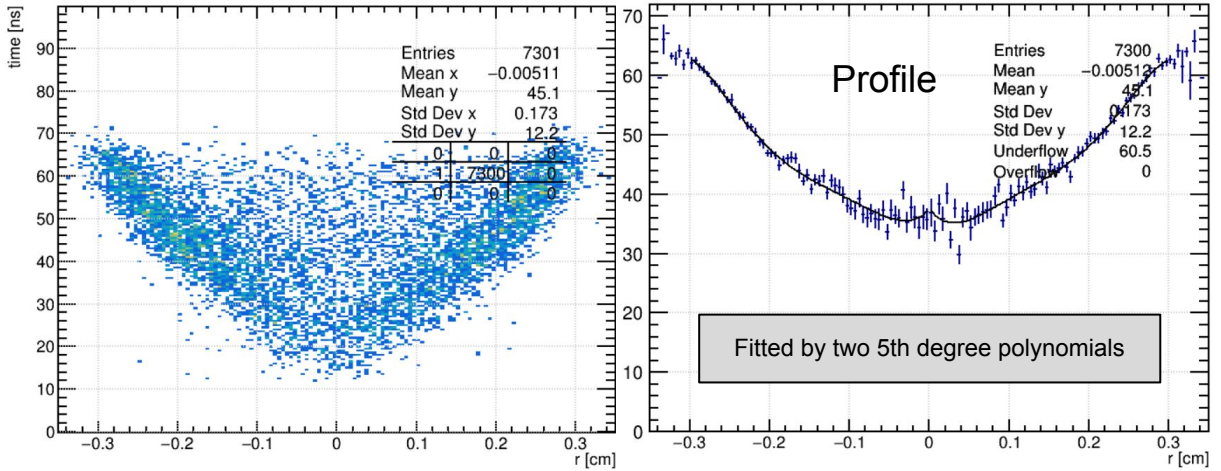


RT relation: 10^4 uniformly distributed tracks

Ideal tracks:



Tracks smeared by gaus with $\sigma = 200\mu\text{m}$



Backup slides

Silicon stations occupancies

