SEED TRACK PERFORMANCE

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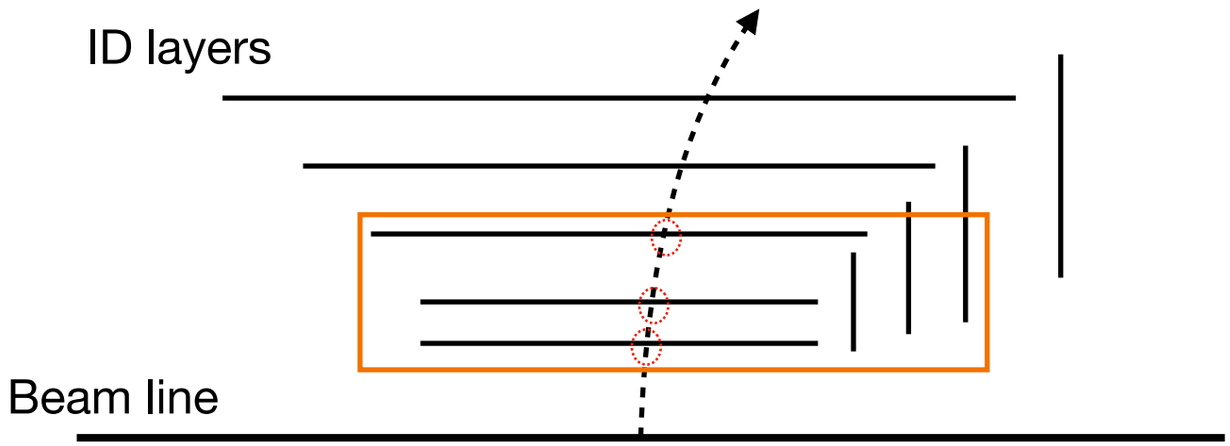
ACTS seed configuration

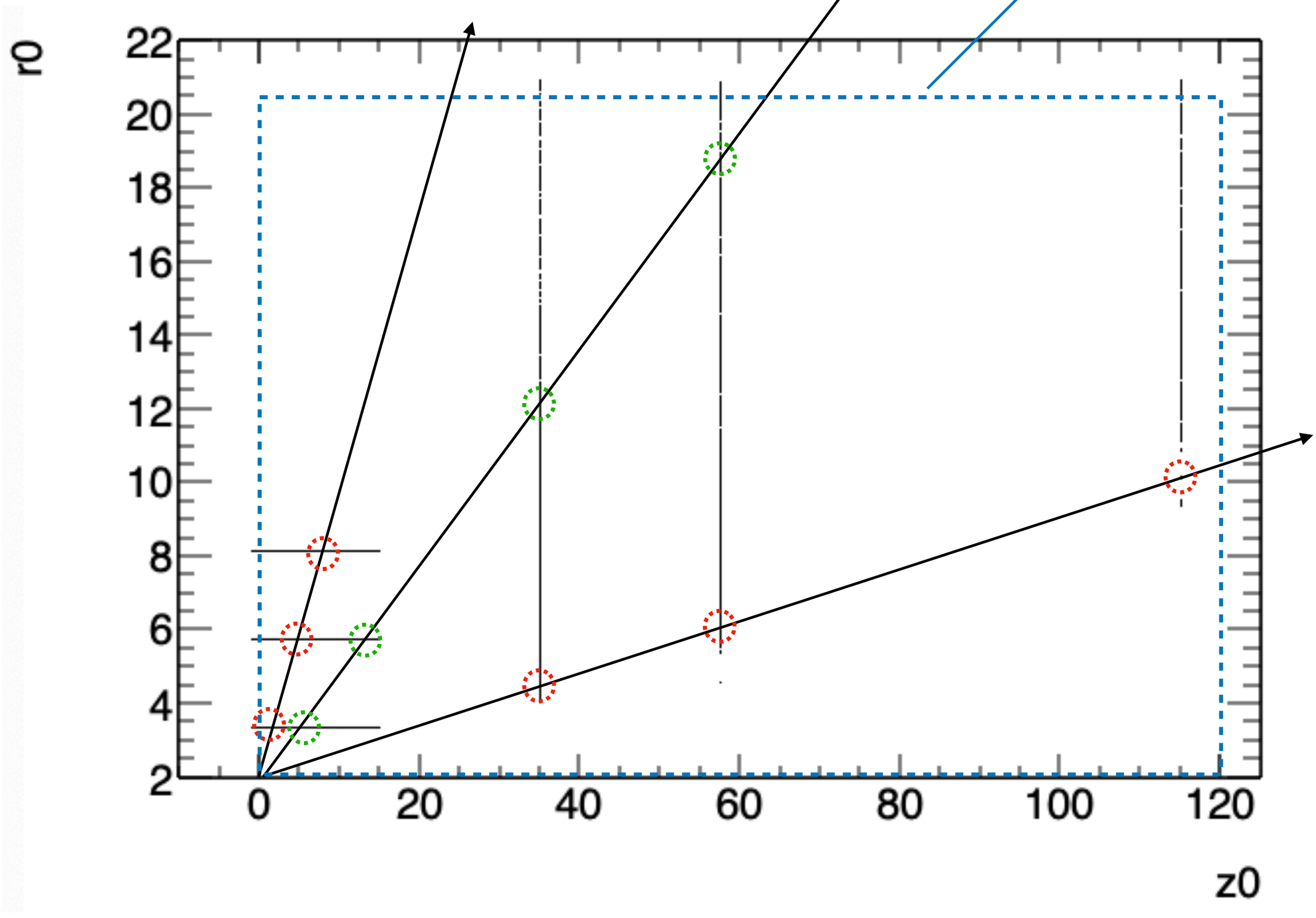
Phase-space limit

```
config.minPt = 400;
config.rMin = 30.;
config.rMax = 208.;
config.zMin = -1200;
config.zMax = 1200;
config.deltaRMin = 1.;
config.deltaRMax = 180;
config.collisionRegionMin = -100.;
config.collisionRegionMax = 100.;
config.sigmaScattering = 50.;
config.maxSeedsPerSpM = 1;
config.cotThetaMax = 10.1;
config.bFieldInZ = 1.4 / 1000.;
config.radLengthPerSeed = 0.05;
config.impactMax = 20;
```

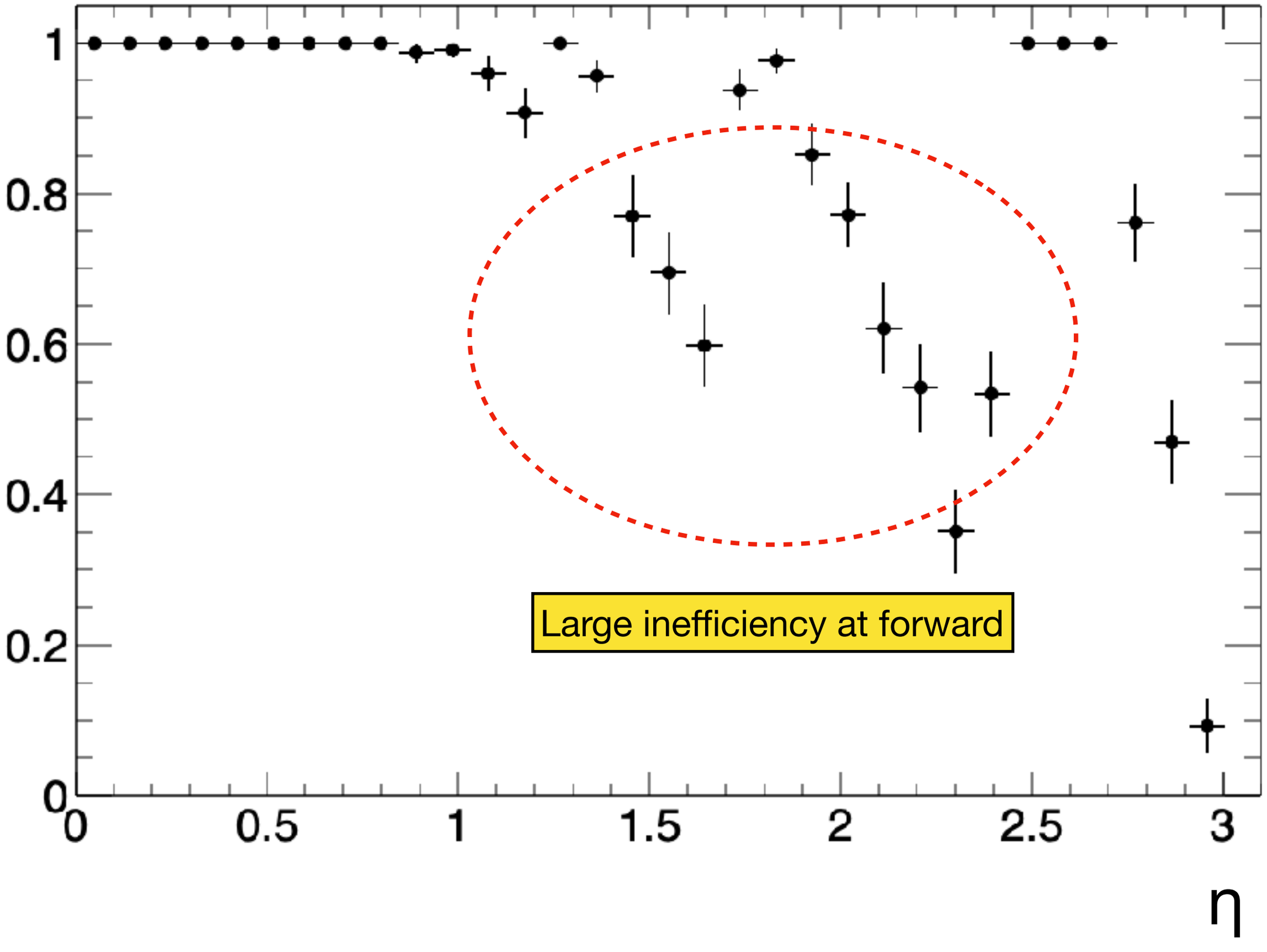


Seeds are reconstructed from 3 hits

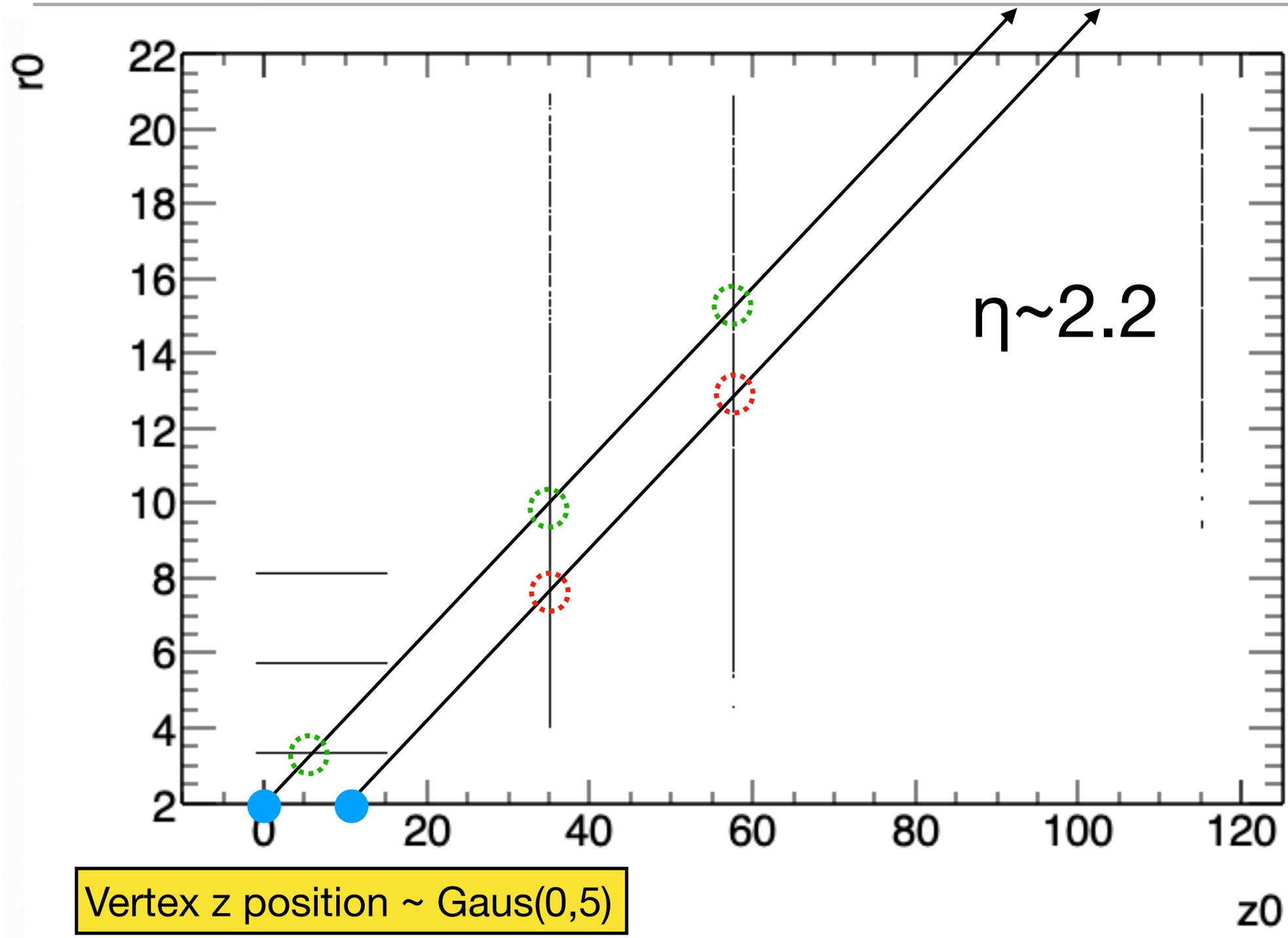
Layers position



Efficiency in η



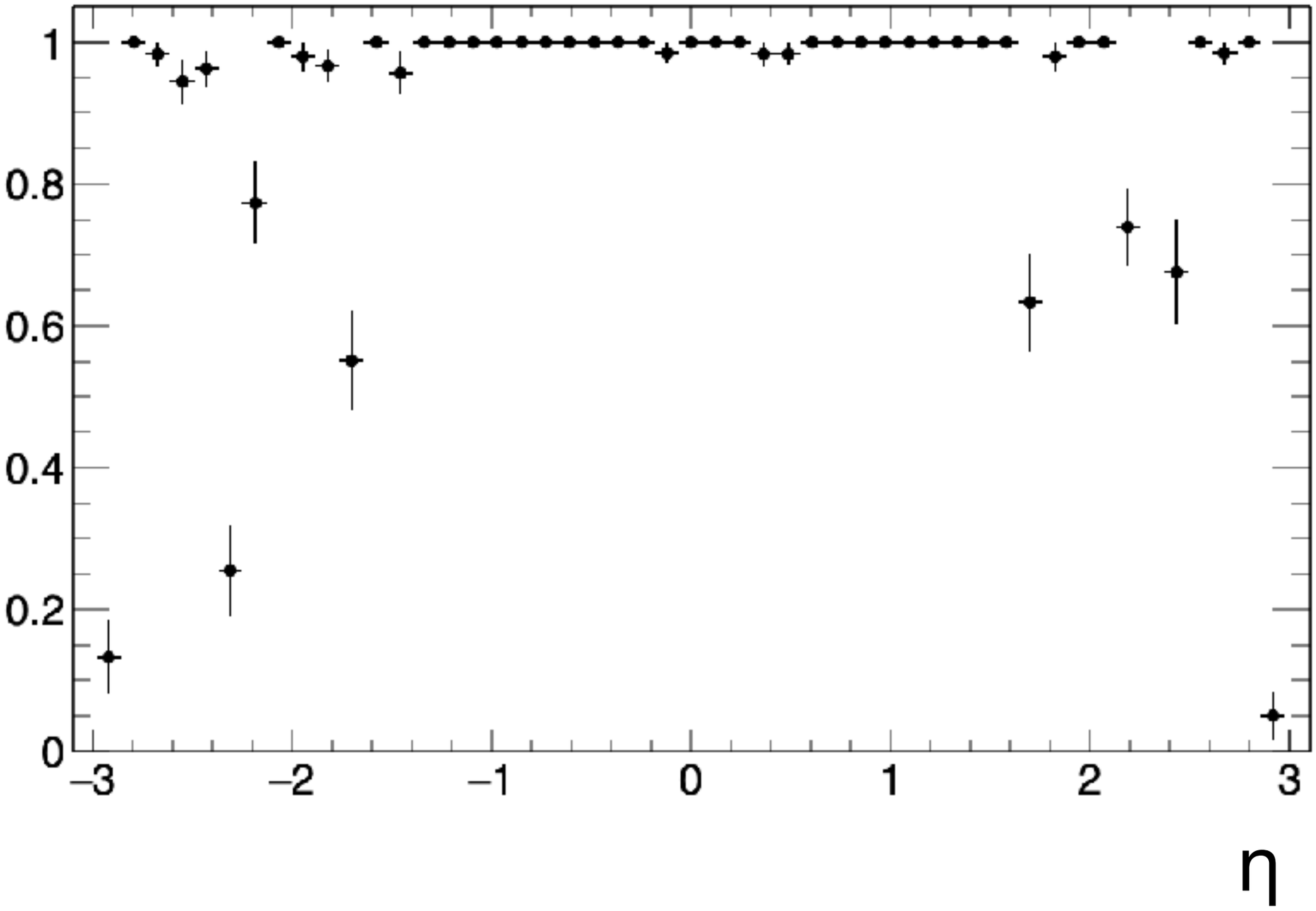
Layers position



Vertex z position ~ Gaus(0,5)

Variation Z vtx position induce region with only 2 hits, producing the inefficiency

Efficiency in η — fix vertex position

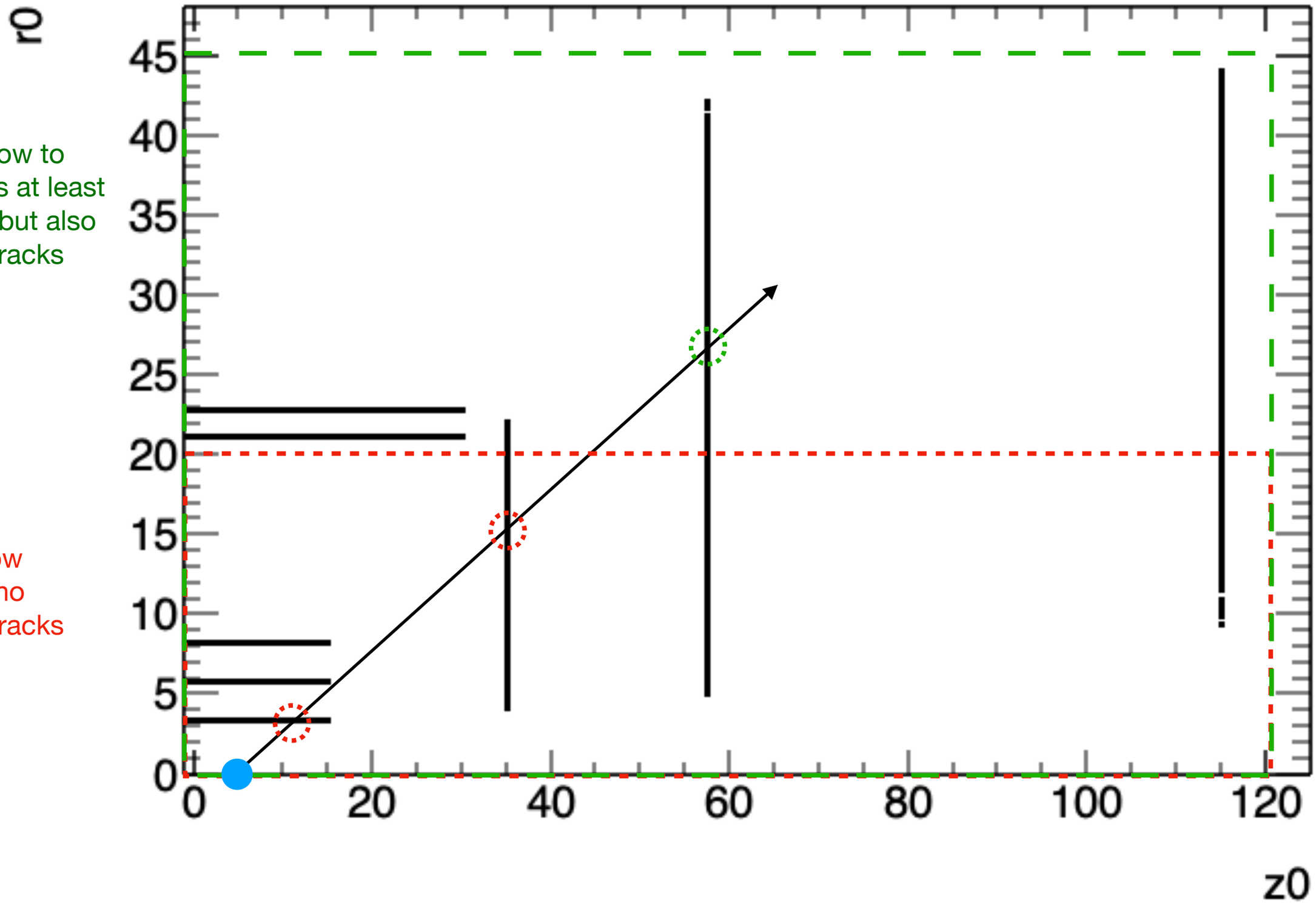


Still inefficiency but in very specific regions

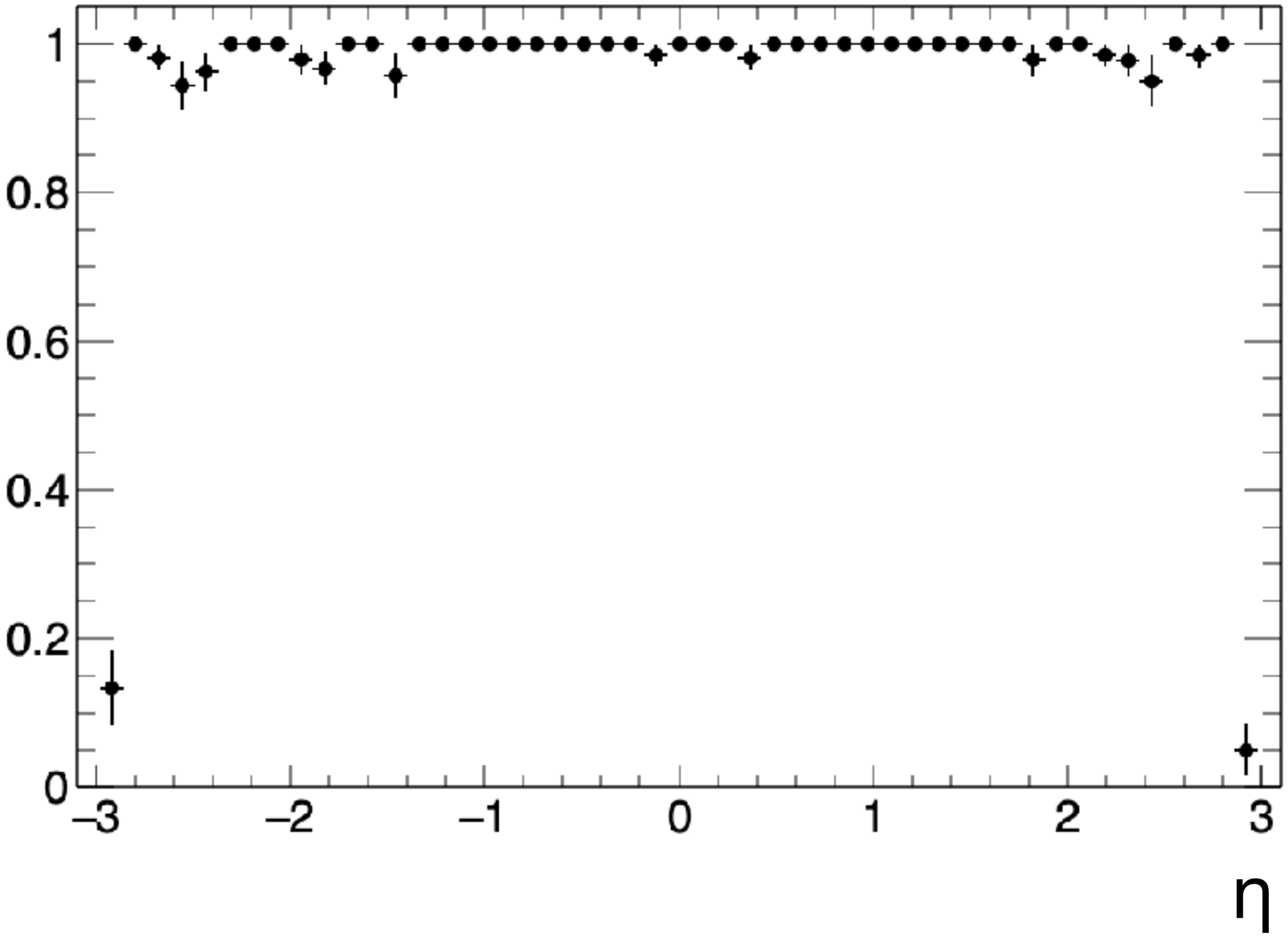
Layers position — increasing window range

Larger window to ensure 3 hits at least - better Eff. but also duplicated tracks

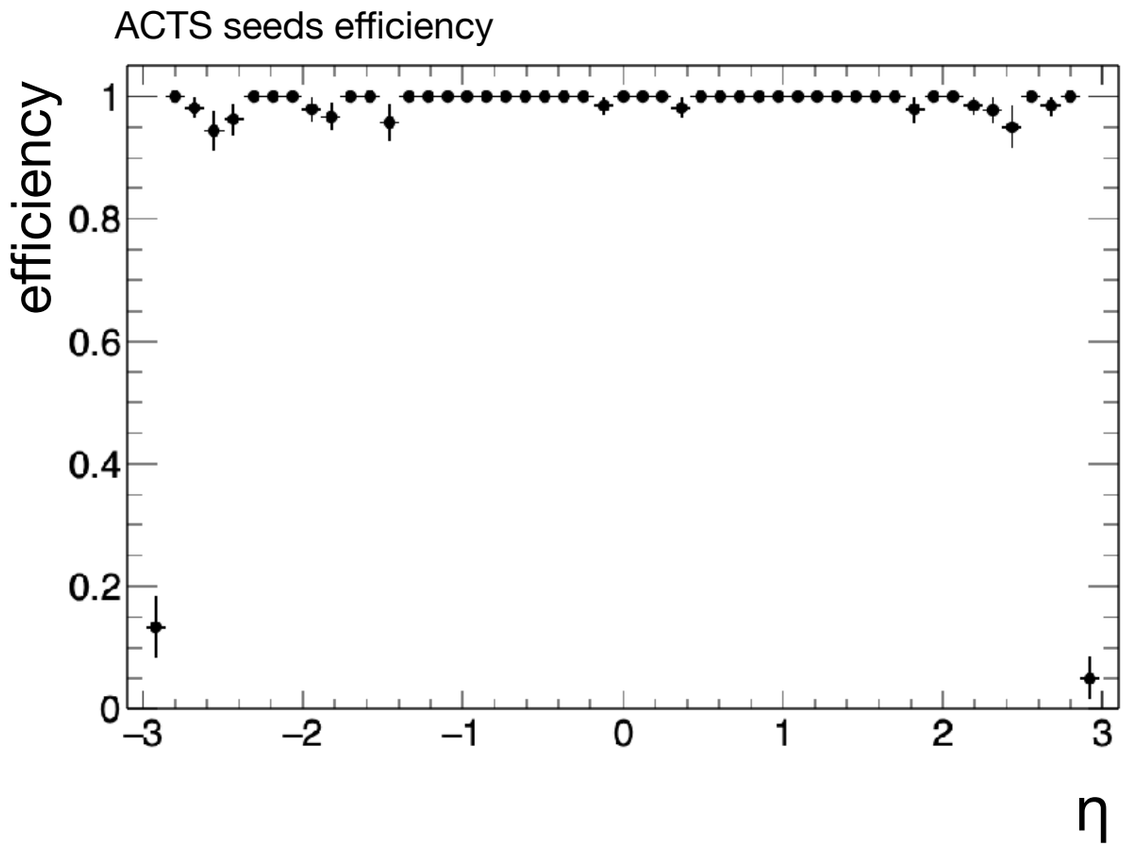
Small window - worst Eff. no duplicated tracks



Efficiency — increasing window range



Summary

Fully efficiency seed tracks reconstruction can be achieved

- It required a larger window
- A second step have to be implemented to remove duplicated tracks