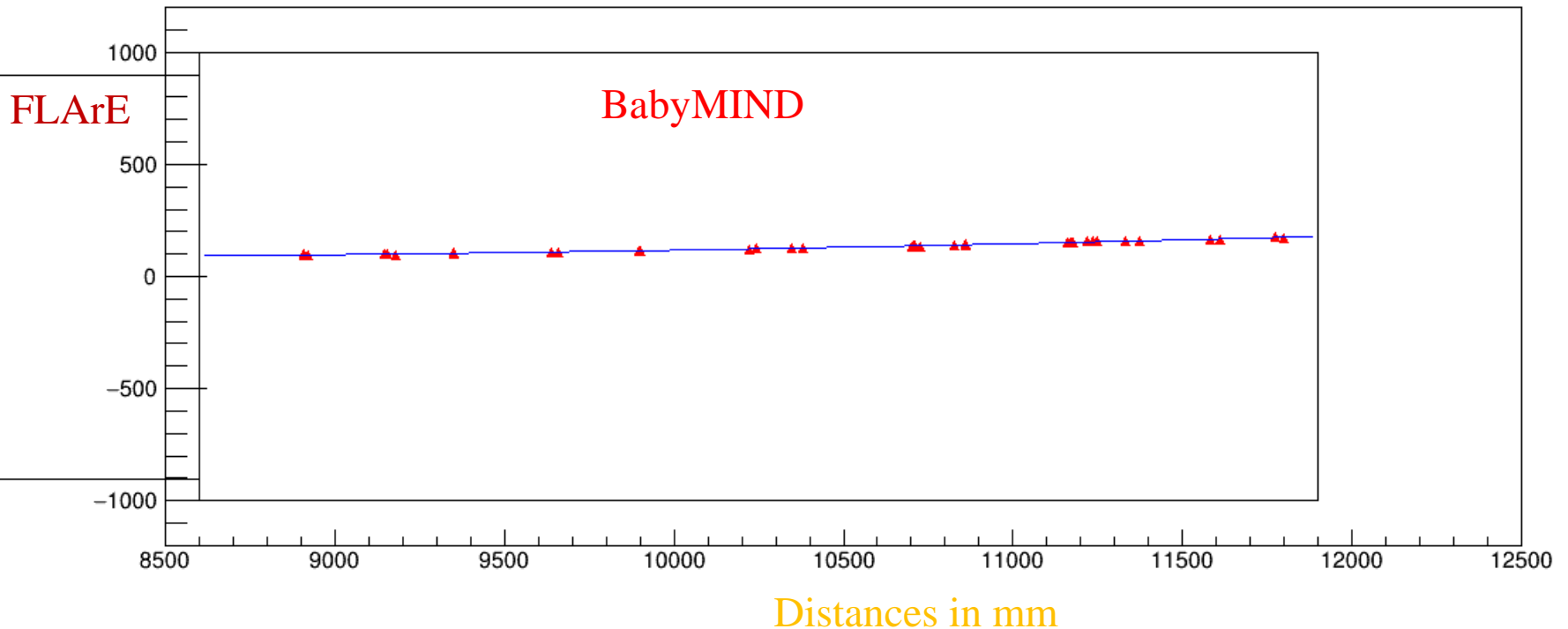


Trying to use BabyMIND to reconstruct momentum ... not very successfully 😊

- Using the BabyMIND geometry that Matteo Vicenzi has created, I've worked (modified/corrected) with Matteo's codes to use "CircleFit" to find momentum in the BabyMIND volume, in the y-z plane.
- E.g. 10 GeV muon in FLArE:
-

ZY projection



Though the fit seems good, $p_T \sim 0.3 * B * (r_c/1000)$ gives quite different p_T .

- It got 52 GeV/c in this case.
- Muons tend to lose a couple GeV when they reach BabyMIND.
- The fit assumes a uniform field of 1.5 T is ~inaccurate.

```
Scanning particles...
pT = 8.01327 GeV/c , z = 8910 mm
pT = 8.01186 GeV/c , z = 8917.5 mm
pT = 8.00755 GeV/c , z = 9170 mm
pT = 8.00581 GeV/c , z = 9177.5 mm
pT = 7.88552 GeV/c , z = 9360 mm
pT = 7.88426 GeV/c , z = 9367.5 mm
pT = 7.88015 GeV/c , z = 9620 mm
pT = 7.87888 GeV/c , z = 9627.5 mm
pT = 7.40299 GeV/c , z = 9867.5 mm
pT = 7.31843 GeV/c , z = 10222.5 mm
pT = 7.24601 GeV/c , z = 10355 mm
pT = 7.16188 GeV/c , z = 10708.8 mm
pT = 7.15797 GeV/c , z = 10710 mm
pT = 7.15779 GeV/c , z = 10717.5 mm
pT = 6.71931 GeV/c , z = 10850 mm
pT = 6.71811 GeV/c , z = 10857.5 mm
pT = 6.6724 GeV/c , z = 11155 mm
pT = 6.67117 GeV/c , z = 11162.5 mm
pT = 6.63369 GeV/c , z = 11245 mm
pT = 6.63246 GeV/c , z = 11252.5 mm
pT = 6.58891 GeV/c , z = 11342.5 mm
pT = 6.58184 GeV/c , z = 11595 mm
pT = 6.45122 GeV/c , z = 11785 mm
pT = 8.01065 GeV/c , z = 8925 mm
pT = 8.00462 GeV/c , z = 9185 mm
pT = 7.88259 GeV/c , z = 9375 mm
pT = 7.87762 GeV/c , z = 9635 mm
pT = 7.40178 GeV/c , z = 9875 mm
pT = 7.31715 GeV/c , z = 10230 mm
pT = 7.24379 GeV/c , z = 10370 mm
pT = 7.15648 GeV/c , z = 10725 mm
pT = 6.71648 GeV/c , z = 10865 mm
pT = 6.6743 GeV/c , z = 11146.2 mm
pT = 6.67258 GeV/c , z = 11147.5 mm
pT = 6.63496 GeV/c , z = 11237.5 mm
pT = 6.59251 GeV/c , z = 11327.5 mm
pT = 6.58324 GeV/c , z = 11587.5 mm
pT = 6.45248 GeV/c , z = 11777.5 mm
No. of points to be used for CircleFit : 38
pT : 52.1495 GeV/c
*****
```