Tertiary Beam – downstream shielding considerations

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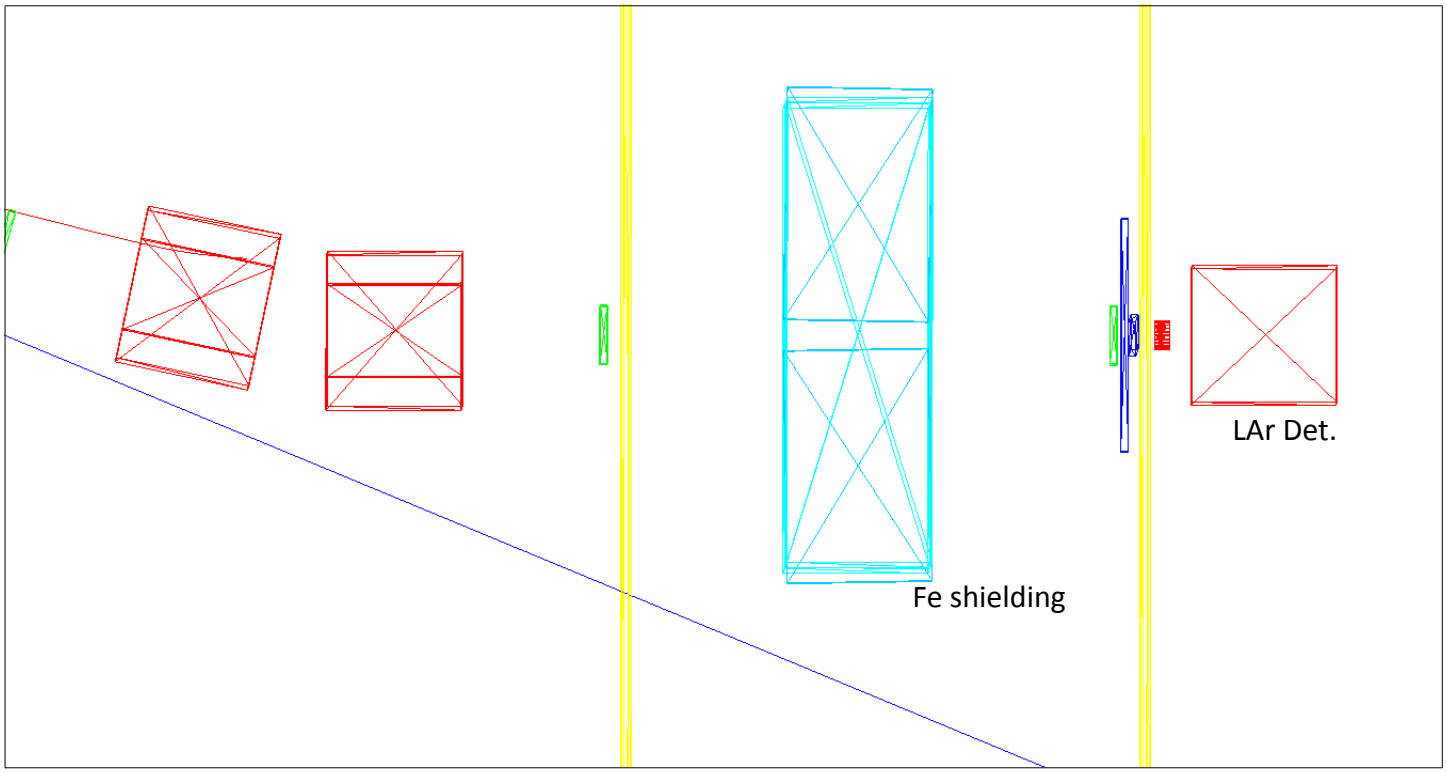
Downstream end of Tertiary Spectrometer

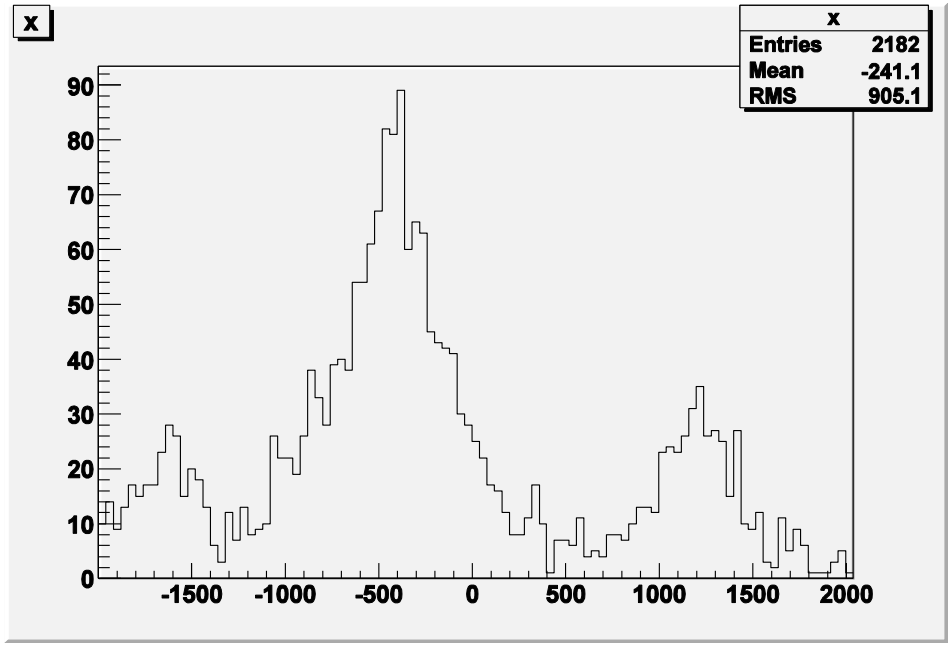
Note – no reason not to place the tertiary beam further downstream in closer proximity to the Liquid Argon detector

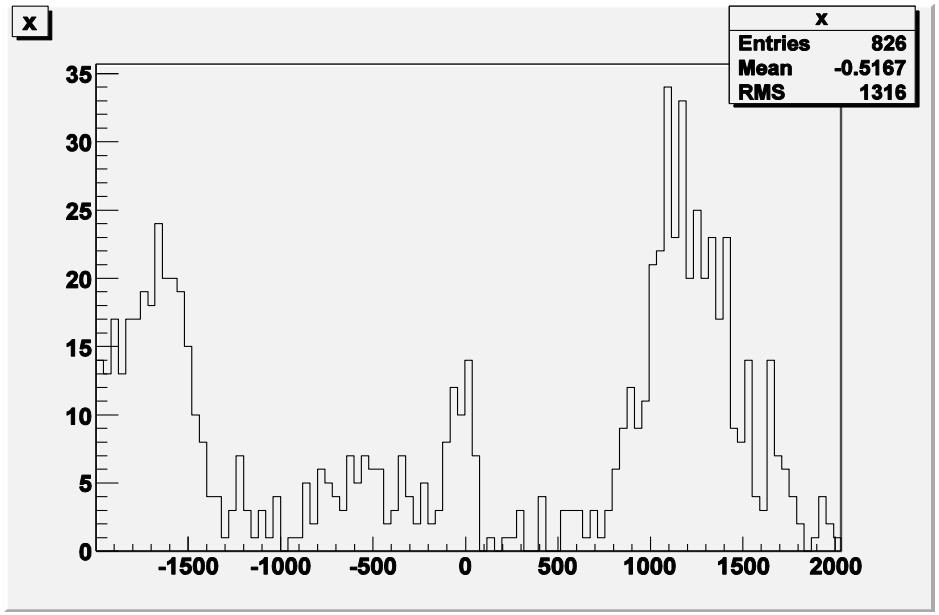


- Fe shielding are stacked Fe blocks, side blocks are square, set at a small angle to define the collimator. Details to be determined.

Without and with the downstream shield

- The **Fe** shield in this simulation is **500 mm** along the beam direction, 100 mm vertical gap.
- 500K π^+ generated





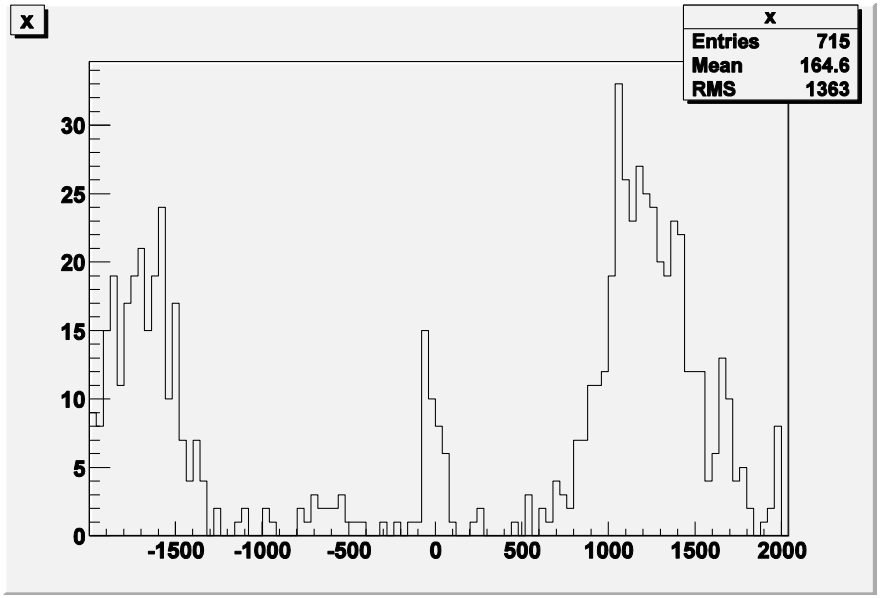
Downstream Shielding
1000 mm thick

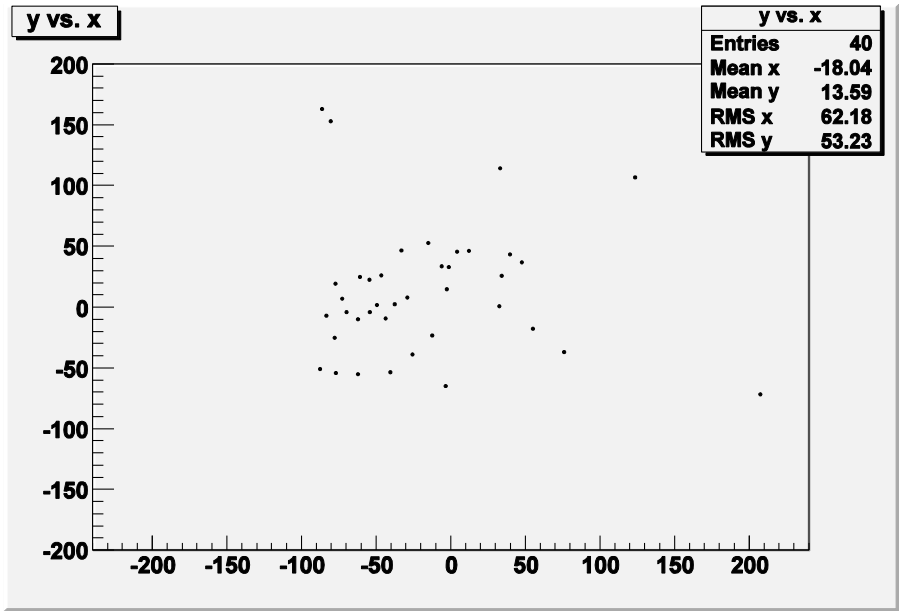
Upper figure – large horizontal detector as slide 3

Lower – nominal size of the LAr detector

15 tracks enter the 4” **port**

“Real” design to be done!





There is a file of tracks based on 2 x 10^6 π^+ on the target
A sample is shown below. z is the location of the last chamber.
x, y, z are in mm; Px, Py, Pz in MeV/c
file name: WC4tks.txt
format: ASCII text fixed format

EventNo	PDGid	x	y	z	Px	Py	Pz
21104.0	2212.0	-45.0518	23.9327	7260.00	-26.6706	1.8141	474.2401
27629.0	2212.0	-53.6744	50.1056	7260.00	-27.8051	2.8951	479.3448
29900.0	11.0	45.7044	35.7561	7260.00	0.5664	0.4872	10.4995
47392.0	13.0	-1588.5082	-110.4817	7260.00	-88.7969	-3.6025	205.5471
50378.0	211.0	8.5660	-37.3120	7260.00	5.9405	-1.0533	306.6828
74811.0	-211.0	-1925.8211	-698.3627	7260.00	-283.7432	-120.6615	464.3447
75135.0	13.0	-1938.3264	64.8076	7260.00	-160.2092	6.3145	212.4023