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Subject: Re: Panda target and vertex cuts

Posted by [Klaus Götzen](#) on Wed, 28 Oct 2015 08:30:24 GMT

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Hi,

the PhD thesis indeed indicates, that the reactions come from this overlap volume with diameter 1.6mm (+-1 sigma region) in x,y directions and 3mm in z (thickness of the pellet stream). The integral of this 2-D gaussian in x,y between -2...2mm in both directions is something like 97%, which seems to be quite robust against small shifts of the center point (i.e. how well we know the absolute position of this volume in space, which depends on alignment). A shift of 1mm in both x and y still gives P=80%.

-> Your cut of +-2mm around (0,0,0) for the pellet target case might be fine I guess.

Concerning the cluster jet, you can take a look at p. 30, Fig. 5.8 in Target TDR ([https://panda.gsi.de/oldwww/archive/TargetTDR/Targets\\_TDR.pdf](https://panda.gsi.de/oldwww/archive/TargetTDR/Targets_TDR.pdf)). There is reported about a fermi like density function with a diameter of about 12-14mm. This would refer only to the spread in z-direction, so that you in that case can apply a tight cut only on the vertex distance to the z-axis, perhaps combined with a rather wide cut on the vertex z-position.

Best,  
Klaus

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