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Subject: Re: Scattering Angle Cut

Posted by [miree](#) on Tue, 08 Sep 2015 13:24:03 GMT

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Hi Alberto,

I saw this as well. It always looks like this. The reason is (as Christian correctly mentioned) the uncertainty in the position measurement.

You have 3 (x,y) measurements (one before, one at , and one after the target), each with measurement error. In order to get a scattering angle of 0, you need all errors to be 0. These are 6 random numbers that have to be exactly zero, for which the probability is 0.

Consequently, you will never measure scattering angle 0.

It is most insightful to do a small Monte-Carlo simulation where you simulate the three position measurement and reconstruct the scattering angle.

Once you introduce uncertainties in the position measurement, the reconstructed scattering angle will peak at values greater than zero.

Michael

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