From: Greg Kalicy [mailto:gkalicy@jlab.org]
Sent: Thursday, September 03, 2015 8:30 AM
To: Graf, Norman A.
Cc: Stepan Stepanyan
Subject: Re: B field 3D maps

Hi Norman,

Procedure was as follows:

1) First I corrected all simulated files to get rid of the weird jump in “y” axis that we discovered some time ago. Discussions with person responsible for generating this maps and closer look to the B:z for different x and y combinations showed me that it appeared to only some combinations of “X” and ”Y” - without any noticeable pattern and there was no physical reason for it. That is why I used good shape of B:z with x/y closest to the ones with jump to correct the shape.

2) To correct fringe field we used experimentally obtained maps. Stepan had Primex results published some time ago. To make sure that the values are still valid we remeasured several points with Mthieu Ehrhart and FX. Values were in good agreement. I took three maps that overlapped in case of settings with our TOSCA maps (5k, 9k, 13k Gauss). I approximated TOSCA simulation values at x:y:z points of PRIMEX maps and generated correction function that I used to correct 3 TOSCA maps.

3) By using difference between uncorrected B values in simulation files from 3k to 13k and corrected 5k map I calculated corrected B values for 3k to 13k settings. I saved all this values in the root tree together with originally calculated 9k and 13k corrected values to crosscheck if my approximation was fine. They agree very good.

4) I saved maps per each setting from 3k to 13k.

Let me know if you need some more information, or changes in the maps.

Cheers,

Greg