

Minutes of Parity Quality Beam Meeting 10/21/03

In attendance: Areti, Bevins, Bogacz, Chao, Hutton, Nakahara, Paschke, Roblin, Snyder

First Impression of Injector Optics (100 keV) based on difference orbits

A. Bogacz presented progress on analysis of 100 keV transport based on difference orbit measurement using FOPT. Kicks initiated upstream of the first BPM (going through the Gun 3 lens & 15° bend) produced orbits that do not conform with the Optim model, whereas orbits launched after the Wien filter across the last 5 BPM's showed much better agreement with the model (see attached). Only 3 data sets with complete information survived, possibly due to beam scraping in the autoscale mode because the target amplitude was set too high.

Suggestions from the audience:

- Reconcile data with kick strengths for extra constraint
- Check for XY symmetry in the first few BPM's at least

Y. Chao presented analysis of FOPT data taken in the same area using 2 correctors in each plane before the first lens. Interpretation by model from model server (not Optim) was very poor, especially when the first BPM is included (see attached)¹.

FOPT Autoscaling

A discussion on the difficulties encountered with FOPT autoscaling followed the meeting. It was agreed that a more realistic test of this feature in the presence of Chris Slominski, and with all relevant information logged in parallel, is needed as the next step.

Progress after This Meeting

Alex obtained better data in the 100 keV region by turning off the autoscale feature of FOPT, from which he was able to derive correction factors on all lenses on the order of ~10% that explain all data taken. This also took advantage of the most recent update of all longitudinal dimensions in this area. This updated information is being passed to Yves Roblin for corresponding model server update. Comparison of this data with Hall C observation would help answer some crucial questions. We will discuss this in the next meeting.

¹ It has since been discovered that the model server was underestimating the focusing from the solenoids. So this analysis has to be redone with input from the new model server.

Attachment

Bogacz:

http://www.jlab.org/~chao/Bogacz_Oct15-1i04HV

http://www.jlab.org/~chao/Bogacz_Oct15-1i04V

http://www.jlab.org/~chao/Bogacz_Oct15-3i01H

Chao:

http://www.jlab.org/~chao/Chao_Diff_orbit_100keV_101503.pdf