RAL Meeting of KURRI FFAG Collaboration 23/4/14

Attendees:

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S. Machida
D. Kelliher
C. Rogers

Minutes

Suzie went through slides to cover the status of each of the proposed experimental items from the March trip. Chris Rogers presented his analysis of the energy loss measurement, and Shinji also presented his slides about dispersion matching and vertical orbit matching. Suzie also presented some results by Chris P on the k value and dispersion.

At the end there was some discussion on working these results into a publication and possible future visits.

Our current to-do list with possible people to do each item:

Analysis to-do list:

Analyse the horizontal orbit matching data with 468A corrector [SHINJI/DAVID]

Investigate how to combine the horizontal triangle plate monitor data with the sum of the vertical bunch monitor data in order to attempt to calibrate the horizontal position. [DAVID/SHINJI]

Look at November COD measurement data without RF cavity present to check and compare to 'corrected' COD. [SUZIE]

Check if dr/r and df/f give the same dp/p ie. are the dispersion results and k-value results self-consistent? [SUZIE]

Can a large COD value explain the difference between the results obtained with the 3 different probes? Look at using analytical model first [DAVID]

Consolidate the different tune analysis methods and put data together in some folder structure [DAVID/SHINJI]

Analyse 468A corrector setting tune vs energy data [DAVID]

Compare the tune variation with momentum to the k-value with momentum (after data has been analysed…) [SUZIE/DAVID]

Continue foil energy loss analysis to check raw data and notes, move the windowing used in the analysis [CHRIS R]

Simulation/modeling to-do list:

Model or calculate the capacitance of the double plate monitor in order to calibrate the vertical position measurement. [Uesugi?]

How does the closed orbit distortion look in the injection region of the ring (with different corrector settings)? [Malek]

Injection line modeling in ZGOUB [Malek]

Investigate dispersion matching of D, D' from the injection line. (ie. the dispersion measured in the ring is about 0.6 at the centre of the F magnets. The foil is located almost at the centre of an F magnet so it makes sense to 'aim' to get the injection line to create a dispersion which matches this at the foil) [Malek]

Tosca modeling to determine the relationship between the magnet current and field strengths. [Uesugi]

Future equipment/experimental needs:

Is it possible to have a current loop in the ring. This would allow current calibration of BPMs (if BPM response depends on beam current).

In the future possibly investigate a feed-forward technique to counteract beam loading that may be causing energy variation in linac pulse.

Is it possible to implement a DAQ system to automate data taking rather than via an oscilloscope? Would require a number of 'steps' with ADCs, EPICS implementation (?) etc.