KURRI FFAG MEETING 27/07/2017
BlueJeans VC meeting

Attendees:
S. Sheehy, D. Kelliher, S Machida, - RAL/Oxford
Y Ishi, T Uesugi, Okito- KURRI
M. Haj Tahar - Columbia

1. Ishi-san:
   - Gave an update on the KURRI status.
   - They have now observed beam from the LINAC!
   - Did phase adjustment between RFQ and DTL1 – it was quite off-phase. So adjusted relative phase and looked at beam current. (The peak current of 82uA at exit of linac is only 14% of the usual current, 1.2mA to 82uA reduction in transmission at present.). Indicates that maximum transmission may be out of current range of phase, so they will add an extra delay between RFQ and DTL1 to try to improve the relative phasing and increase current.
   - However, tuner of DTL1 got stuck, which needed repairing
   - "Ignitron firing board" (Ignitron is an electron tube) of RFQ is sparking, which may be due to high humidity.
   - They will not have a fixed schedule going forward for another week or two

2. Malek – presentation on resonance crossing in imperfect scaling FFG
   - He looked at a simulation tracking across the same resonances that we see in the KURRI tune measurement. Created analytical model in ZGOUBI based on fieldmaps.
   - In particular he was concerned with the qx-2qy=1 'walkinshaw' resonance. Setup a lattice with a tune variation with momentum to do this.
   - Starts from a 12-fold symmetry machine and then introduces a perturbation, does not re-match after introducing the perturbation.
   - Sees emittance growth (mostly vertical) in both cases qx-2qy=1 and 3qy=4.
   - Do we know the field map of one of the KURRI magnets, and do we know the order of magnitude of error in the magnets in the ring?
   - Shinji suggests to perturb the lattice with a different symmetry to only drive some of the resonances (not every harmonic). David comments that he applied a perturbation to every cell in EMMA but as a harmonic.
   - Ishi-san comments that 3qy=4 is a skew sextupole, but how is it being excited? (he suggests 3qx=11 might be the one observed)
   - Note that also in the vertical, the field map was only median plane so the tracking might not be accurate and this may lead to a 'fake' emittance growth.
   - NB. Also see about third order resonance and trapping: http://accelconf.web.cern.ch/AccelConf/e04/PAPERS/WEPLT115.PDF
   - Measurement of field has been done in the past (Uesugi & Ishi-san). They have some indication that the interference from the environment (iron of transport line and extraction line) may be interfering with the main magnets.

- Suggestion to look at the magnet model and place a ‘chunk’ of iron nearby as if it was an inject/extract line to see at the change in field in the main FFAG magnet. (Perhaps Okita-san could look at this).

3. New FFAG server – need to set up accounts for KURRI side still.

4. Next meeting after the FFAG workshop will (tentatively) be the 12th October