

PLAN FOR ATF BEAM RUN

Aims:

1. Study static erratic features in waveforms.
2. Diagnose position sensitivity on phase.
3. Synchronise data acquisition with IP data.
4. Operate feedback during IP beam size measurements.

Before ATF

- Calibrate variable phase shifter so we know how many turns correspond to what phase shift.
- Match the IPBPM delay cables to produce pairs.
- Test the CERN ZPULS, so we can take them along as back-up.

Before beam shifts begin

- *Aim 1*: TDR on cable lengths to the IPBPMs (with help from Naito-san).
- *Aim 2*: Install variable phase shifter outside tunnel.

ATF work

- *Aim 3*: Synchronise data acquisition. (1) Terunuma's trigger method and/or (2) Glenn's published synchronisation signal, which can be implemented in FONT5A firmware. We will also have to make sure this signal, along with all FONT readbacks, are actually being published to Epics (with Doug's help). Both routes require saving FONT data in the same DAQ as the SIS digitiser, which will require the help of ATF staff. → This will be on-going parasitic work throughout December. May require turning beam on and off to check synchronisation, once everything else in place.
- *Aim 1*: Record waveforms (maybe mover calibrations) and look what happens to the static signal without and then with delay cables – take an access to put the delay cables in halfway through → 1 shift
- *Aim 2*: Test position sensitivity to phase by manually changing the LO phase using a variable phase shifter. Requires a well-tuned beam, on-waist, small jitter –schedule after small-beam tuning shift? → 1 shift
- *Aim 2(b)*: **If** we have a synchronised DAQ, use upstream system to look at position dependence on bunch phase. → 1 shift
- *Aim 4*: Help with feedback on Kano-san's study– whenever his shifts are. **When** we have a synchronised DAQ, attempt to measure beam size at IP simultaneously. → Other December shifts