FONT provisional shift request

The FONT group would look to come to KEK for two weeks within the Nov/Dec beam running – as yet unsure as to which.

Could we please request:

- **First week:** 3 singles shifts - with nominal optics for all shifts
- **Second week**: 1 single & 1 double shift - a nominal optics single shift and a high-beta optics double shift.

ATF Plans – week one

- **Preferably: Three single shifts – nominal optics**
- Aims for this week:
  - Use the upstream system to stabilise the angular jitter of the beam at the IP, thus allowing us to make resolution measurements in nominal optics configuration. Typically we are unable to do this as the angular jitter exceeds makes it impossible to align the beam within the dynamic range of all three BPMs.
  - If possible, we would then look to perform IP feedback with a BPM on the beam waist, so that we were using the upstream feedback system to stabilise the angular jitter and the IP feedback system for position stabilisation of the beam waist.
- Operational notes:
  - Upstream system used for angular stabilisation (up to a factor of 4 – thesis, N. Blaskovic Kraljevic)
  - Resolution measurement for second bunch, for comparison with the resolution measurement achieved in high-beta optics.
  - Perform waist scan, by looking at bunch-to-bunch correlation across waist scan - a reduction in bunch-to-bunch correlation should be seen when off waist due to the reduction of angular jitter by the upstream FB system.
  - Use the IP feedback to stabilise the beam waist, with the upstream system stabilising the angular jitter. Compare resolution measurements with IP feedback performance – test whether the feedback performance matches what we would expect given the resolution?

ATF Plans – week two

- **Preferably: A single shift (nominal optics) and a double shift (high-beta optics)**
- Aims for this week: Perform further studies of the phase jitter introduced onto the reference signal by the limiting amplifier and its impact on the BPM resolution. We aim to characterise how the phase jitter introduced by the limiter varies as a function of the input level to the limiter by scanning through a range of attenuations on the reference signal at the input to the limiter module.
- We would like to determine how much the limiter jitter is correlated sample to sample?
- If possible, we plan to performed this study with **high-beta optics** so we would also be able to make resolution measurements, and could study how the resolution depends on the limiter phase jitter.