

# Beam Study proposal

## DR low emittance tuning

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# Motivation and major points

- We need low emittance.
- Have not been achieved recently.
- Re-alignment of DR magnets will be done.
- Good optics is important for low emittance.
- Set “design” optics and re-start tuning.  
(‘commissioning’ of DR)
- BBA (measurement of BPM-magnet offset) for all sextupole magnets has not been done before.

# DR emittance study

## **Commissioning (6 shifts + alpha)**

- Set “design” optics.
- Injection tuning. Store beam.
- Orbit, dispersion, coupling corrections.

## **Optics check (6 shifts ?)**

- Beta-function measurement. (Quad trim vs. tunes)
- ORM (orbit response matrix) measurement and analysis.
- Optics correction, based on (3) and/or (4), if necessary
- Injection tuning. Store beam.
- Orbit, dispersion, coupling corrections.
- Iterate
- Emittance measurement in DR using laser wire

## **BBA (4 shifts ?)**

- BBA (BPM-Quad, BPM-Sext offset measurement) and set correction.  
Orbit, dispersion, coupling corrections.
- Iterate
- Emittance measurement in DR using laser wire

# Man power (to be confirmed)

## Commissioning

- All (?)

So far,

- Kuroda, Okugi, Kubo (at KEK)
- Wolski and Woodley (remote ?)
- You will be welcome !!