Very Recent Status of ATF(Mar.2007)

S.Kuroda(KEK)

1.Injection

Strategic study by RF Gun experts

→2×10^{10}/bunch in single bunch operation down to EXT

Gun laser sometimes unstable.

Need #10 Mod repair for multi-bunch operation

2. DR

Routine tuning(η and coupling correction)

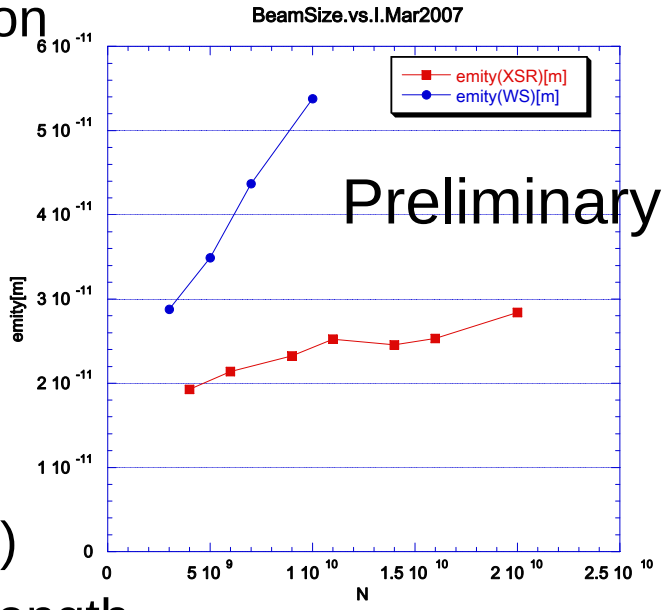
→emity≈1e-11m(zero-current limit)

3. EXT

Still observed emittance growth

→Issue for study(So long no study since 2000)

ε measurement usually suffers from limited strength of skew Q for η correction. No coupling correction.



Preliminary

XSR meas. βx=1.69m 13Mar2007
WS meas. Δp/p=9e-4 15Mar2007

Many R&Ds are on-going well.

e.g. LW, Cav.BPM, New DR BPM, FONT4, …..

List of Issues for Beam tuning in ATF EXT and ATF2

1.Optics and layout

1.1 Finalization geometry

Confirmation of common Q strength with DR and finalization of layout and optics (Alignment group requires final version)

1.2 Optimization of SX strength and skew position in EXT

$\leftrightarrow$ EXT tuning

2. EXT tuning$\rightarrow$Okugi and M.Woodley's report for detail

2.1 Dispersion correction $\rightarrow$ position of skew Q?

2.2 Coupling correction $\rightarrow$ need new skew Q?

Are there anything to be studied experimentally in present EXT?

3. Commissioning of FF$\rightarrow$Okugi's report for detail

3.1 Beam into dump

3.2 Hardware commissioning

e.g. Cavity BPM, mover,….

List of Issues for Beam tuning in ATF EXT and ATF2(cont.)

4. FF tuning

3.1 Matching and BBA

Are there anything that can be done in present EXT as an exercise?

Some Qs don't have their adjacent BPMs. No movers but correctors in EXT.

3.2 Beam size tuning

Traditional method, R-matrix method,….

Knobs: SX movers(dx, dy, dθ), K2 of SX

→ Waist, η, coupling and higher order knob (traditional method)

OCT knobs are required ?

R knob (R-matrix method) (J.Jones)

$dx=R.x_0$ (where $dx=x_{err}-x_0$ and constant terms ignored)

→ Alignment and field error tolerance (with BBA study)

Ground motion, jitter and multipole-errors for comprehensive study?

(→ G.White's talk?)