

ATF2 Draft Near Future Plan
for Goal 1
(Discussed in Project meeting)

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Re-define Goal 1

- It is hard to achieve 37 nm beam size at bunch population 1 or $2E10$ near future.

Goal 1 can be

- Demonstration of chromaticity correction comparable to ILC BDS (at lower intensity).
 - Need to consider for specifying numbers.
- Goal in Feb. and March
- Goal before summer shutdown

First priority to do

- Reproduce and re-confirm ~ 70 nm beam size at low intensity.
- Then, try all tuning knobs and see what the minimum achievable beam size is.
- The study will be done without major hardware change.
- We will use 10x1 ($\beta_x^* 40\text{mm}$, $\beta_y^* 0.1\text{mm}$) optics. (same as Dec. 2012)

Two issues to be studied -1

Investigation of the reasons of strong intensity dependence (wakefield?).

- Ref cavity scan:
- Scan ref cav wider range?
- Compare wire and IPBSM at high intensity.
- Consider installing a movable dipole cavity BPM.
- Consider installing a (tapered) collimator for reducing background of IPBSM.
- Calculate wakepotentials of structures in the beam line, and consider hardware change if necessary.

Two issues to be studied -2

EXT emittance study and reduction

- Study of effects of alignment changes of the kicker and the septum magnets.
- This will need much hardware work and affect other studies. Probably need a special dedicated week. Need negotiation with other study groups. (one week in Feb-March?)
- Keeping DR emittance small (10 pm level) is also important, but it is not clear whether further emittance reduction is necessary/effective for reducing EXT emittance.

At some point, depending on results of issues in the previous page

- We need to set design optics (betax* 4 mm, 1/10 of present betax*) and confirm small beam size.
- We should perform experimental simulations of ILC beam tuning.

Continuous Run for Goal 1 Again

- Two weeks from May 13 seems the best (?)
- But,
 - Schedule of the new IP chamber installation
 - IPAC ???
 - ? ? ?
- Training (operation and tuning) should be continued.