

Summary of the ATF2 status and discussion meeting, SLAC, March 20-21, 2007

1. ~~necessity of~~Are 4 sextupoles ~~at-needed in the~~ extraction line ?
~~F~~first optimization of ~~the~~ skew Qs, then we will decide if they are needed.
2. two skew quadrupoles i.e. 6 in total while only 4 are ~~only~~ available.
Mark : QS1X just upstream of QD2X, and QS2X just downstream of QD5X
+/- 20A with 300urad rotation error
- can we check the rotation error with the at-test setup (QBPM+mover) ?
- question to Terunuma-san; Can IDX magnets operate up to 20A for existing data with 20A ? Yes !
Okugi : QS1X and QS2X will ~~be-replaced-place with~~ SF1X and SF4X, respectively
IDX skew quads to QS1X, QS2X, QK2X and QK3X (< 5A) (Mark: these four magnets can be existing IDX magnets with existing +/-5A power supplies)
new skew Qs = QK1X and QK4X > 10A (20A preferred) (Mark: these two could be new IDX magnets, with +/-20A power supply)
3. Septum - alignment and feasibility study will be done by S. Kuroda.
4. Detailed configuration at IP: BSM, IP-BPM, carbon wire scanner, and HONDA monitor, to be drawn by Okugi
- optimization of their locations
5. Glen will include ATF-GM model in the dynamic beam tuning study. He assumed that beam size can be measured with the carbon wire scanner, Honda, and Shintake monitors at IP.
- beam size measurement ~~/-takes~~ 90 pulses
- ~~BPM 1.2um res.,~~ 11h at 1.5Hz for tuning after initial alignment
- required resolution of additional BPM for feedback is 1.2um, which is hard for stripline. Mark and Glen will see if the optics can be adjusted to relax this.
6. Doug will check availability of carbon wire scanner, which should be a

one-dimensional scanner at least.

7. Andrei suggested improvement of GM-model with new measurement at ATF2. Also, he suggested vibration measurement at the new quad-bpm-support test location with water cooling and power in this summer shutdown.

8. Part list

Mark will updates it and sends it to Terunuma for posting ~~it~~ on the homepage

- devices for commissioning and dynamic tuning (screen monitors (but no stripline BPMs)), correctors.

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- - - devices connected to beam pipe, e.g. vacuum pump

— - Mark has uploaded the second version of "Parts List" presentation to the Indico site

-for last week's meeting. it's called "PartsListDiscussion2". Most of the details of

-what was proposing to do to the MAD decks and the parts list were filled in.
<http://ilcagenda.linearcollider.org/materialDisplay.py?contribId=12&materialId=slides&confId=1461>

9. QBPMs and FFTB movers

~~2~~ 4 reference cavities are preferred for one per straight section at ATF2

~~2~~ signal reduction to provide position information by SLAC and RHUL (UK)

~~2~~ software ~~from~~ FFTB movers by SLAC _____

responsibility : Glen White and Justin May at SLAC, ~~Steward~~ Stewart Boogert and his colleagues (UK)

Movers - 100nm setting error ~~-~~while 50nm in scale

- hardware limit switch was requested by Okugi, but self-limited ?

beam test ~~-~~in May :

- QBPM, ref. cavity, IHEP magnet, mover and HA prototype PS (option)

- installation ~~-~~and length measurement with 0.5mm accuracy ~~during~~ Golden ~~week~~ Week (May 2007)

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- remote shift participation in the beam test - GANMVL
- GM measurement

10. Septum alignment and performance

J. Amann (SLAC) will model the septum to calculate the 3D fields with multipole components.

SLAC will provide data of kick-angle v-s. ~~current~~voltage for SLAC kicker,

Can the SLAC-OTR monitor be installed at downstream end of septum ?

- OTR has an accuracy of 5um
- Doug will check the feasibility during~~in~~ Golden ~~#~~Week.

11. Loss monitor consisting of 1mm diameter fiber with PMT readout

(PLIC system)

- very useful especially at commissioning
- Doug will prepare the monitor to be installed in the ATF-ATF2 beam line (-about 100m long).

12. Shimming modification of QD0 and QF1 will be completed by this ~~september~~September ~~for such that~~ these magnets can be sent to LAPP for stabilization study.

13. 5 sextupoles will be prepared by end of this year. 4 SLC-SX3 sextupoles with 41.28mm diameter ~~and~~ 9cm in length and ~~a~~ 29.2" long SLC sextupole will be reused.

14. 3 bending magnets will be re-biddd ~~in this October~~hopefully at the end of March or in April. They will be produced by end of this year.

15. The production schedule of HA power supply system has been delayed by 4 weeks. They will be delivered to KEK ~~late in end of~~ January ~~=~~ early February 2008. The delay is due to one of HV modules by OEM company.

16. Two commissioning schedules of the power supply system were considered for the availability of magnets. We need to adjust the commissioning schedule after the

floor re-construction: water cooling, power cables, concrete shields, magnets,....

17. The parts list will be updated by M. Woodley. New components were listed. There were discussions on a sweeping magnet of several tens gauss in front of QC0, a OTR monitor in front of septum (30cm long), reference cavities at downstream of each bending magnet and vertical correctors.

18. International collaboration

- Monthly meeting was suggested. The starting time can be rotated for periodically easy participation from 3 regions.
- Alternatively, ATF2 weekly meeting is asked to change the starting time from 10:00am to 2:30pm for possibility of European participation.

Also, ILC-Webex was suggested to be used at the meeting.

- PhD students at ATF2 ; Name, Affiliation, Scientific head, date of PhD finish
Benoît Bolzon , LAPP, Andrea Jeremie, 200?-20??

Maria Alabau Pons, LAL-Orsay/IFIC-Valencia, Philip Bambade

/Angeles Faus-Golfe, 2007-2010?

Anthony Scarfe, Manchester University/Cockcroft Institute,

Rob Appleby/James Jones, 2006-2009 he??, CCLRC Daresbury, Deepa
Angal-Kalinin/ James Jones, 200?-20??

Sha Bai, CES Graduate school/IHEP, LAL/France, Jie Gao

/ Philip Bambade, 2005 - 2010 (Master/3 years and Doctor/3 years)

Taikan Suehara, University of Tokyo, Sachio Komamiya Sachio

(Tomoyuki Sanuki), 2003- 2007

more for laserwire and FONT at least (ATF)

19. discussion with Tor

- We see that the ATF2 project is on schedule except for some delays of power supply system and re-bidding of bending magnets. SLAC has set the ATF2 to the first priority.
- Remote shift participation is encouraged. A dedicated room will be prepared at SLAC, where there are large screen, video camera and

terminals; a candidate room is NLCTA-control room. Partial set of GAN can be tested too.

20. 2 skew quadrupole magnets and the Honda monitor (sub-micron pattern target) should be prepared in advance of the commissioning.

21. Controls

- SLAC and UK will develop and are responsible for the EPICS system for hardware
SLAC/UK are responsible for;
- KEK to provide EPICS => VSYSTEM link.