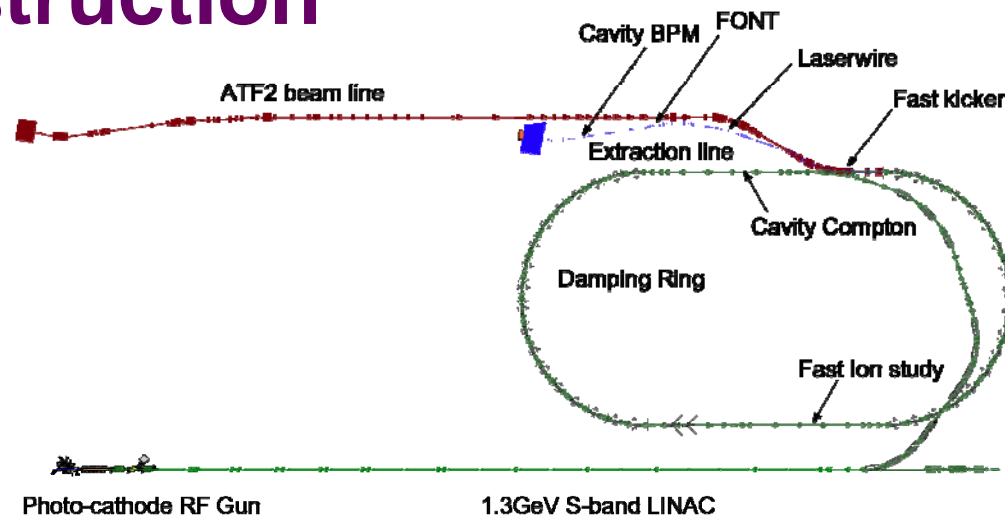


ATF/ATF2 Status

N. Terunuma (KEK)

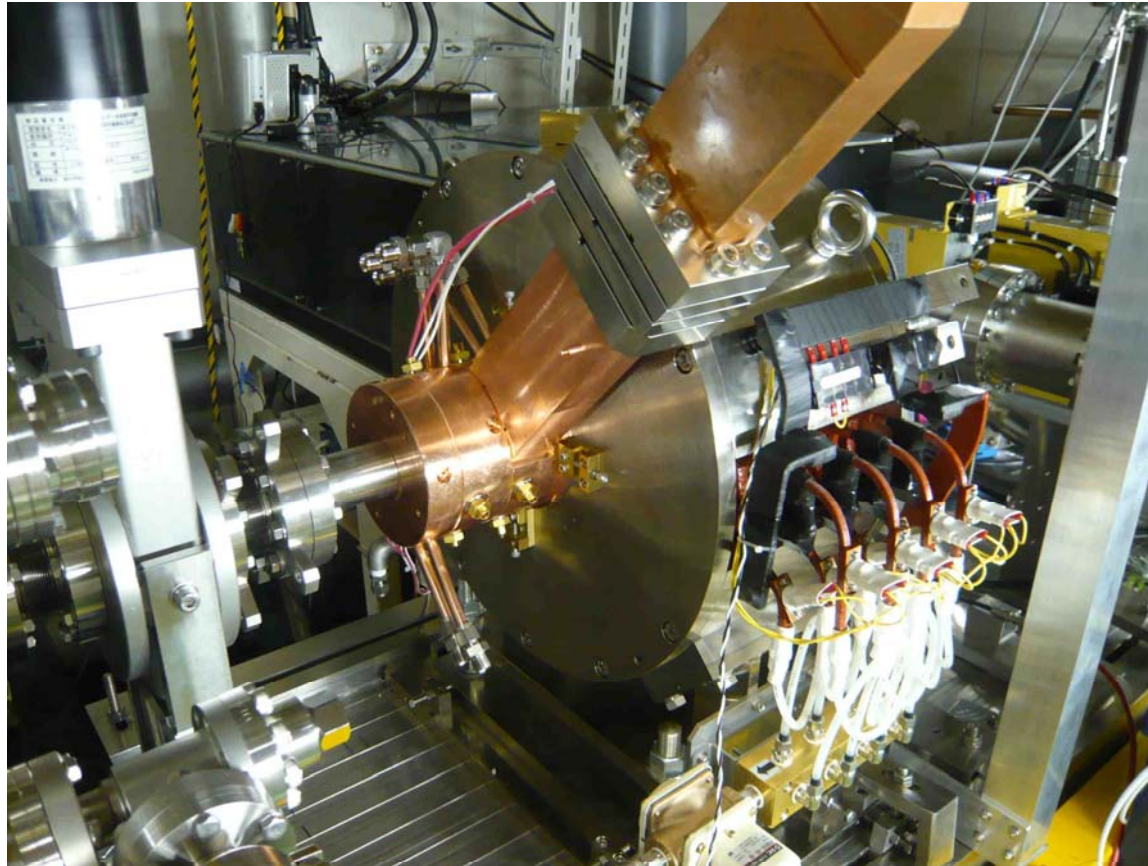
Status after last ICB meeting at DESY.

- New RF gun installation
- Alignment of DR magnets
- **ATF2 construction**



ATF ICB meeting, LCWS08, UIC, Chicago, 11/18/2008

New RF Gun (newest version) was installed for ATF injector, 2008 Sep.



Brand new:

- RF Gun
- Solenoid

RF Gun

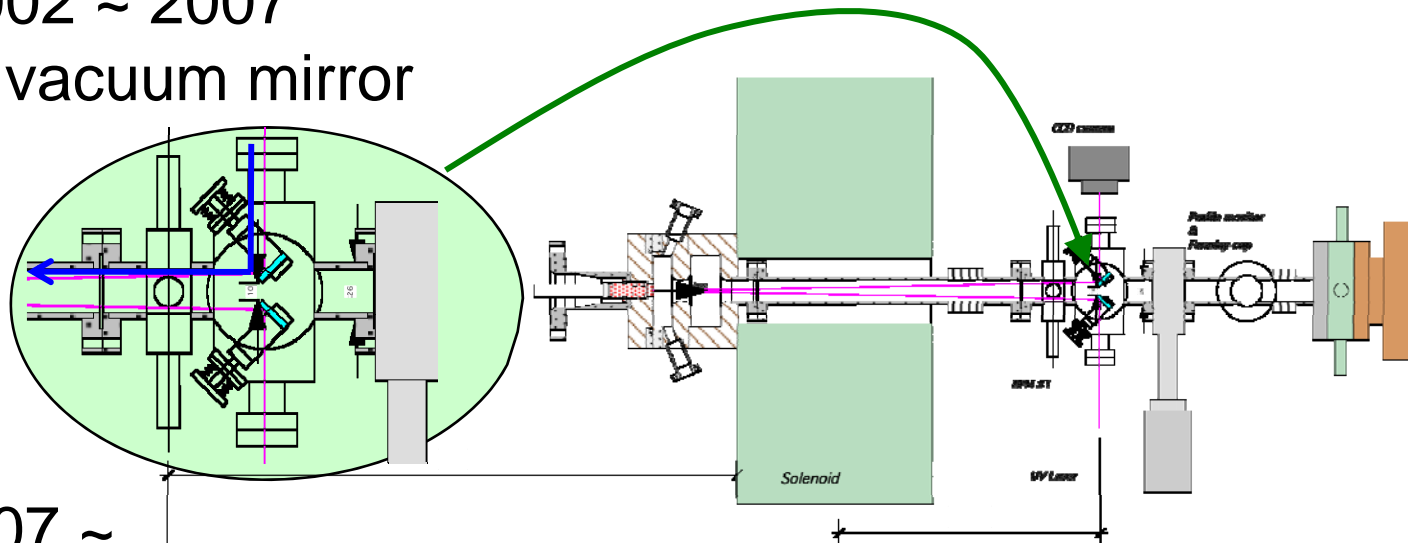
- All parts were brazed.
- Unused ports were removed.
- Screw tuner

8MW -> 10MW

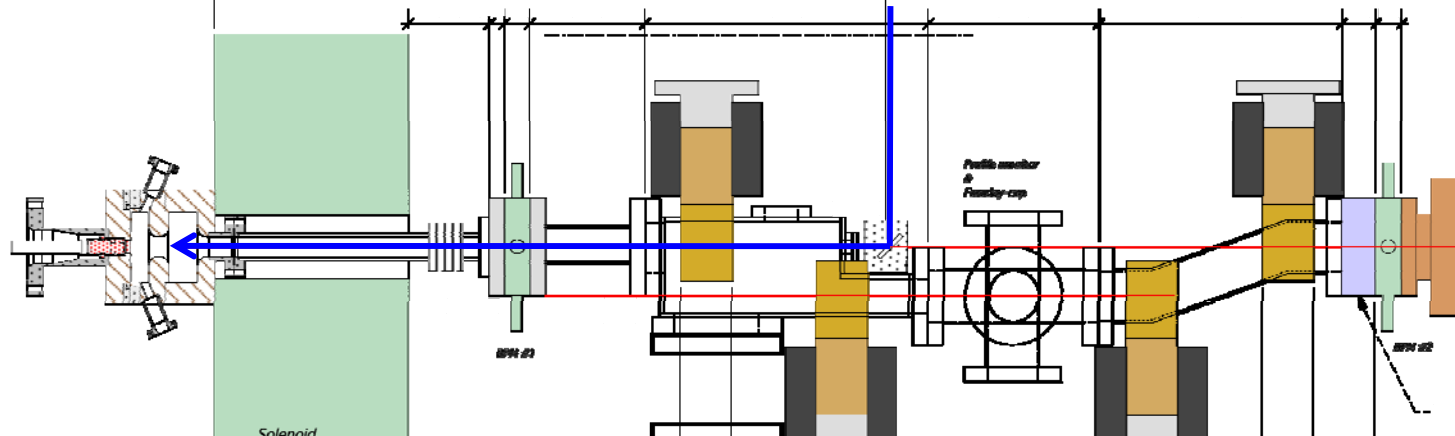
Chicane for Laser Injection

2002 ~ 2007

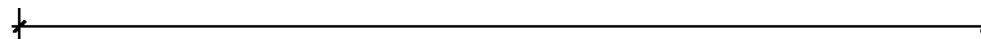
In vacuum mirror



2007 ~



Chicane: 90 degrees laser injection, dark current scraping,
Increase the physical aperture for beam



Vertical emittance became larger

- 5~10 pm had been achieved after emittance tuning described.
- Recently, about 20~30 pm, after the same procedure of the tuning.
- Apparent vertical dispersion and x-y coupling are worse. (? may not be always ?)
- Optics model may be bad. (e.g. tunes and orbit response to steering magnet do not fit with the calculation.)

We need to solve the problem.

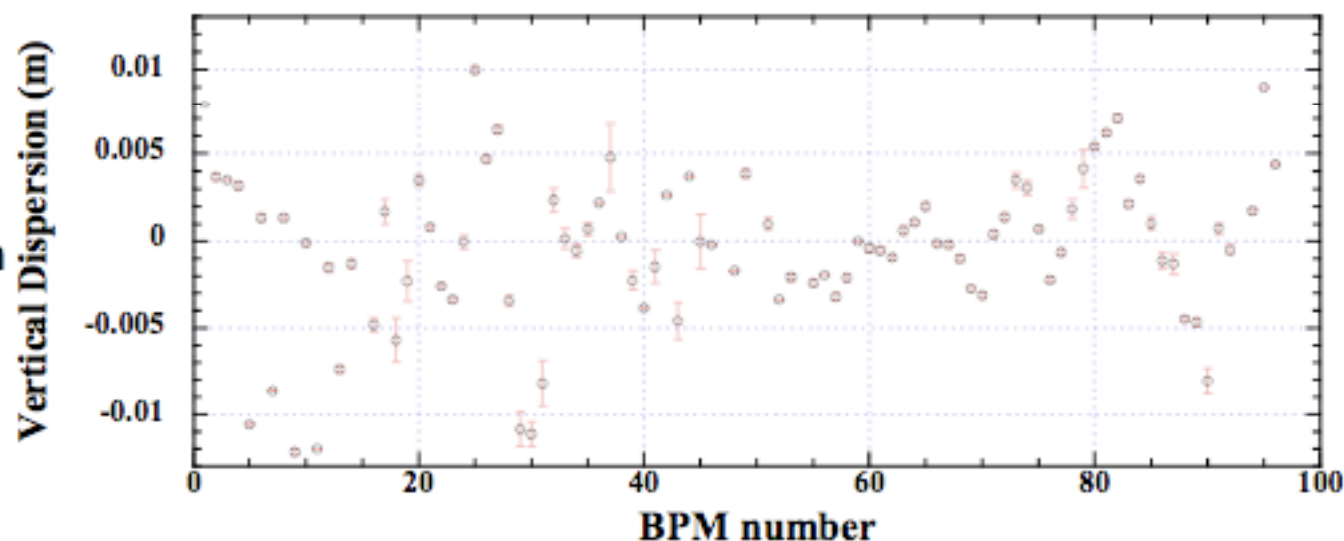
- ATF2 assumes ~10 pm.
- Many instrumentation development need small beam size.
- ILC damping ring requirement is 2 pm.

By K. Kubo

Vertical dispersion, recent and old data

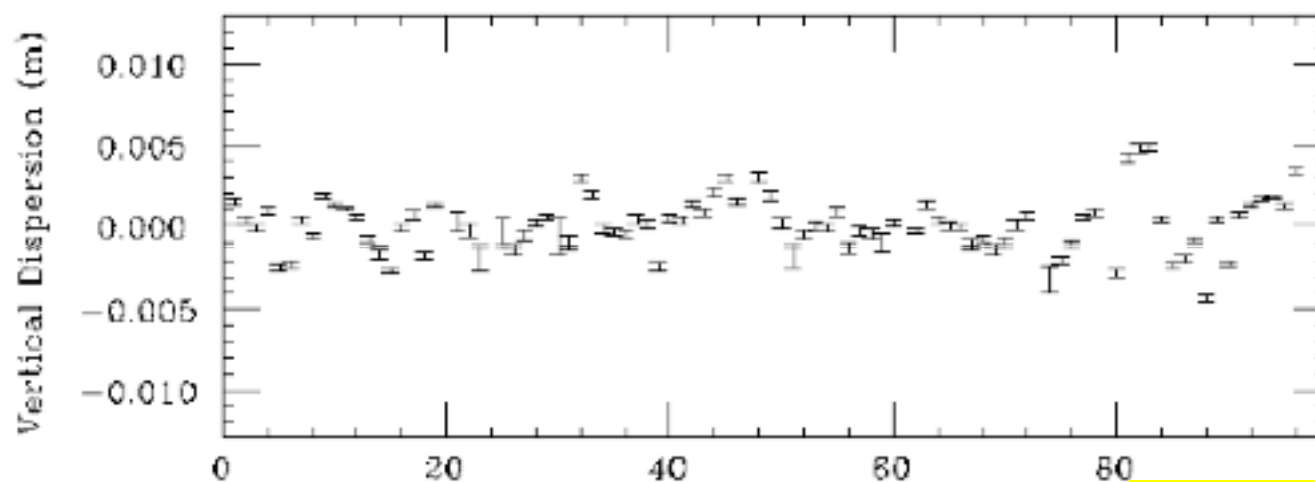
Feb.2008

RMS = 5 mm



May 2003

RMS = 3 mm

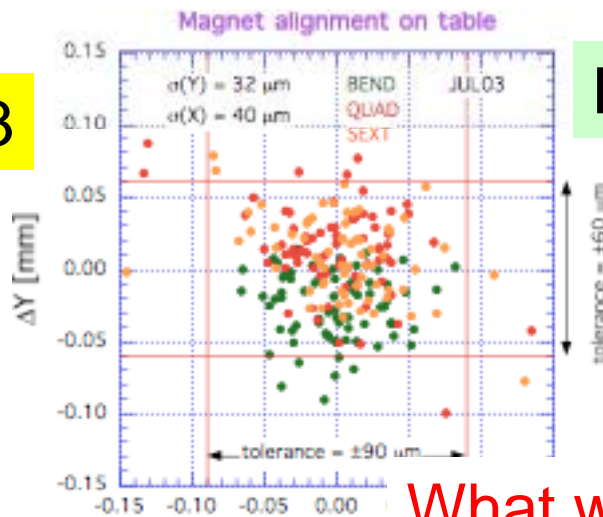


By K. Kubo

Survey of the magnet positions in DR

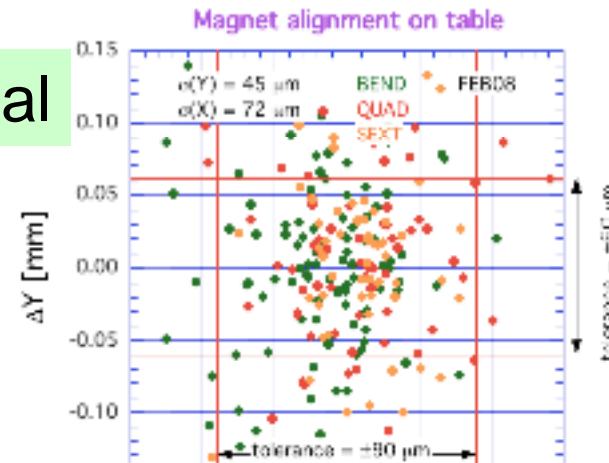
2003

ΔX



Horizontal

2008



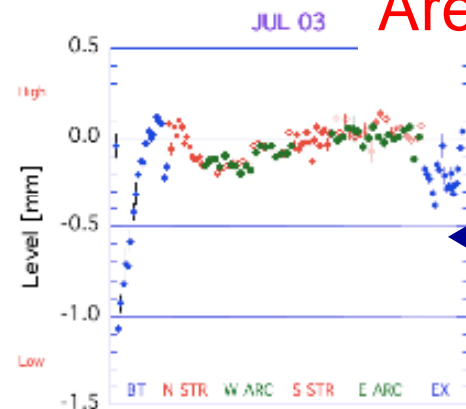
What was happened?

Is this an effect of ATF2 construction?

Are these movements in several years?

ΔY [mm]

図4. ムーバー架台上的電磁石



Different tools
were used for
vertical position
measurement.

Vertical

図6. DR水準測量 (JUL03) .

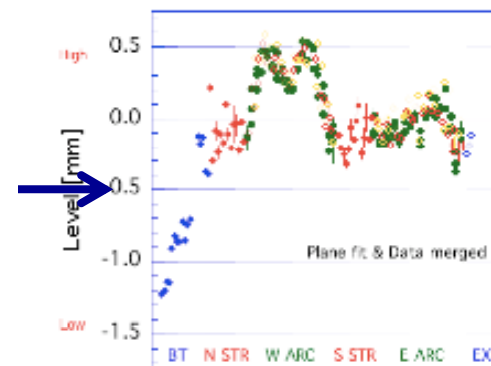
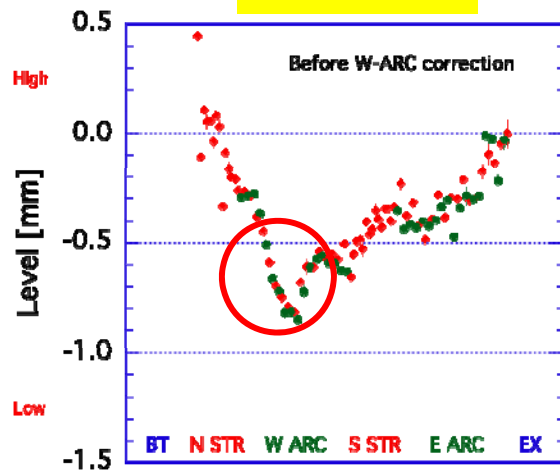


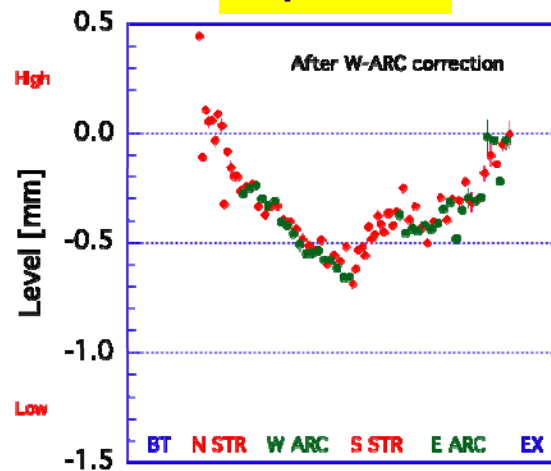
図8. SMART水準測量 (各測定点の平均値) .

Re-align the DR magnets

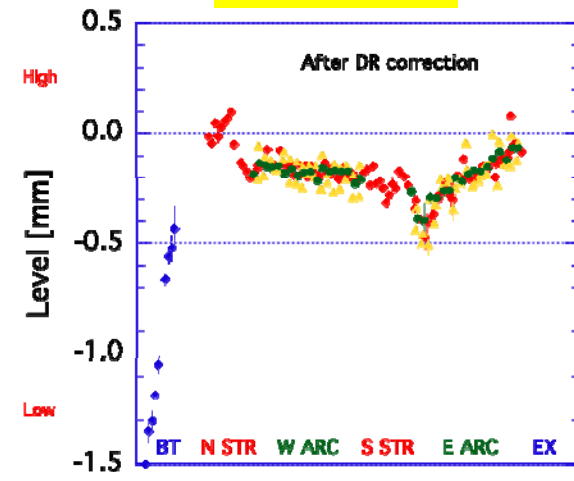
Mar 08



Apr 08



Nov 08

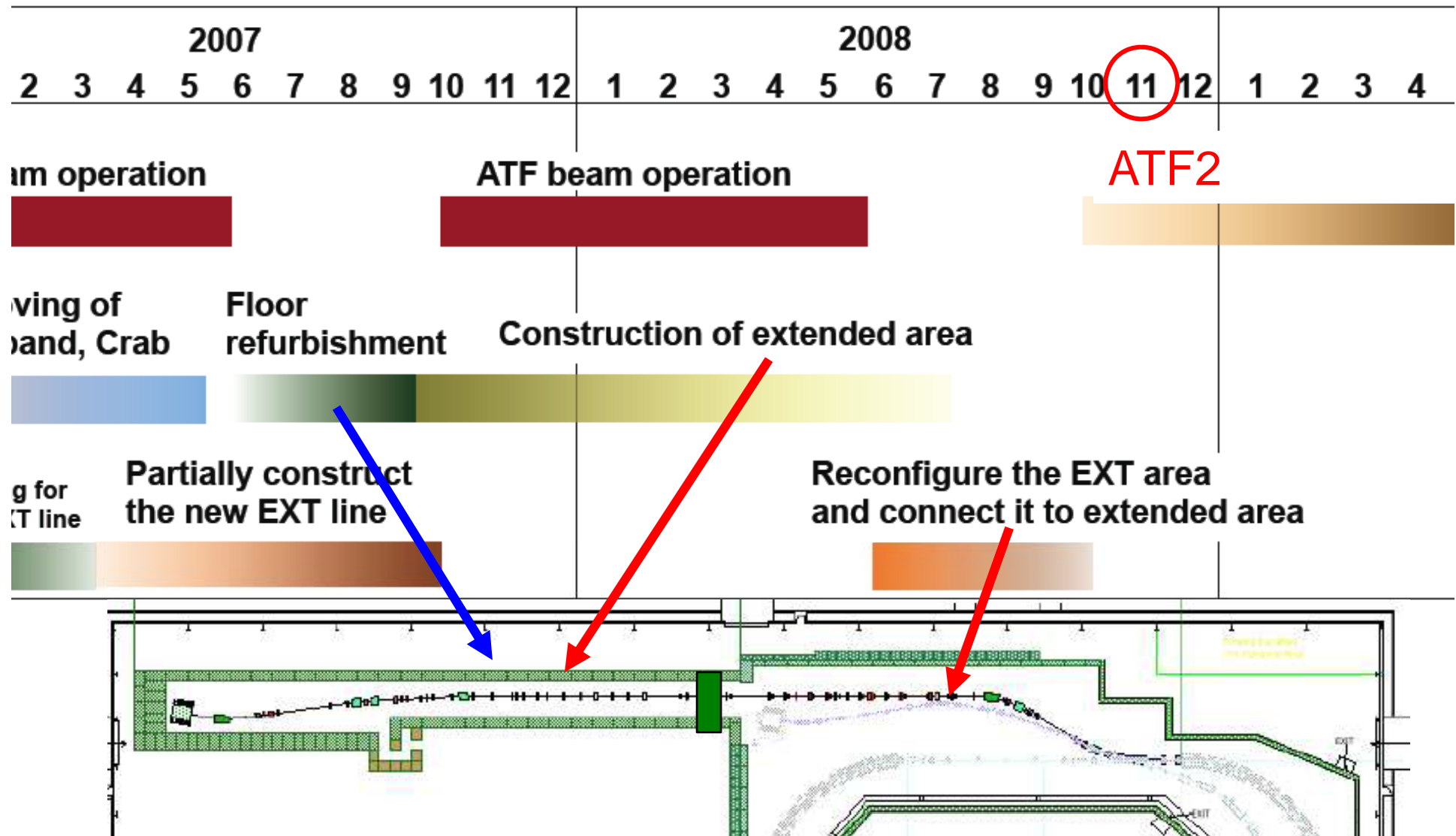


West arc correction
in 2 weeks shutdown
(ATF2 side)

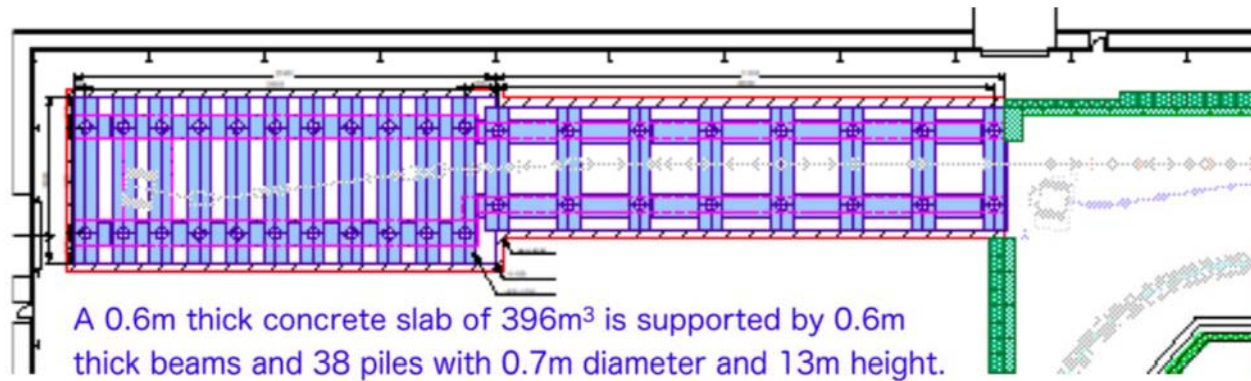
Whole ring correction
in 4 weeks shutdown
(only 1 loop, need more)

We should check the vertical emittance as soon as we re-tune the ring. **Very high priority!**

ATF2 Construction Schedule



Floor Refurbishment



2007/8/20



2007/9/5



2007/9/12



2007/9/14



2007/11/30

ATF2 construction



2008/2



2008/5



2008/9: new EXT

International Contribution (1)

ATF2 Q-magnet Setup

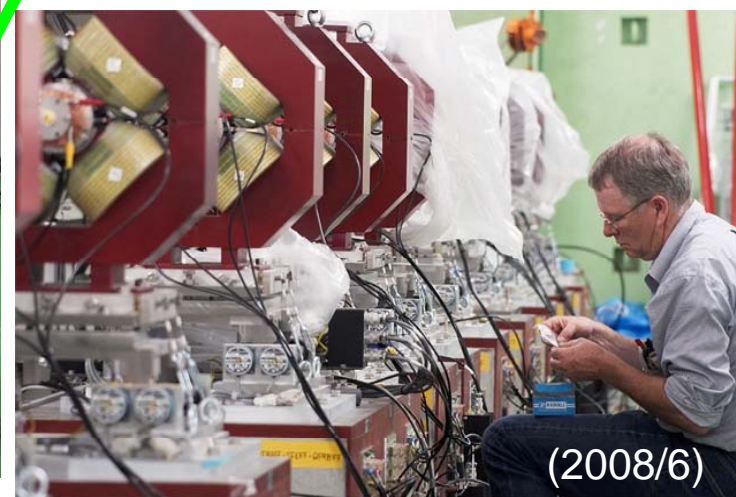
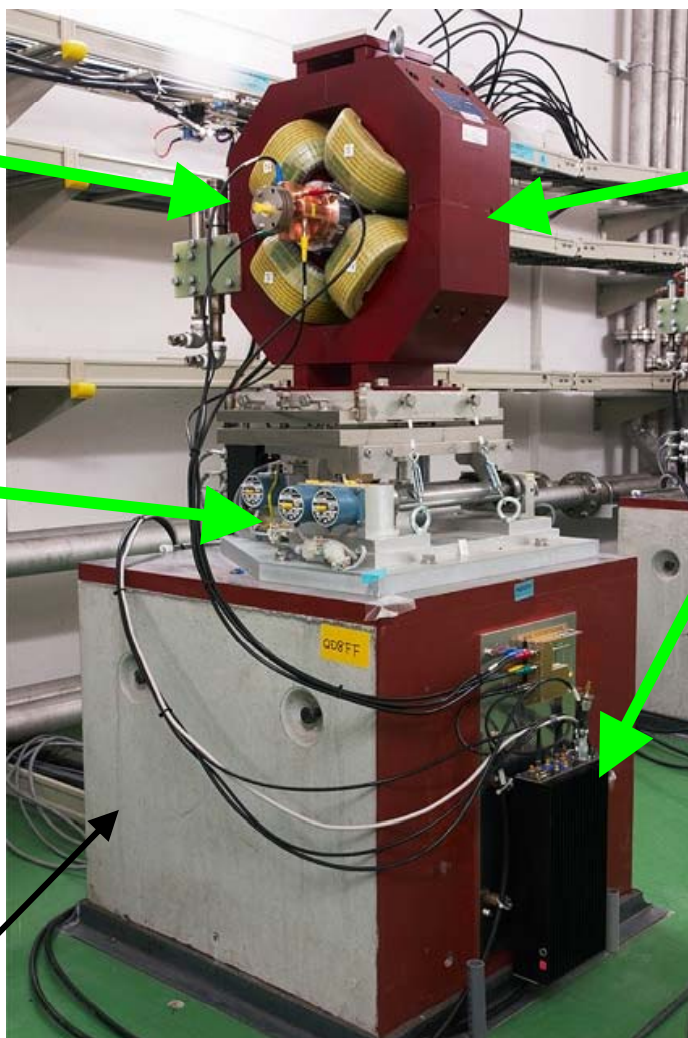
QBPM
(Cavity BPM)
(KEK,PAL)

Q magnet
(KEK,SLAC,IHEP)

FFTB mover
(SLAC)

QBPM electronics
(SLAC)

Concrete Base Stand (KEK)



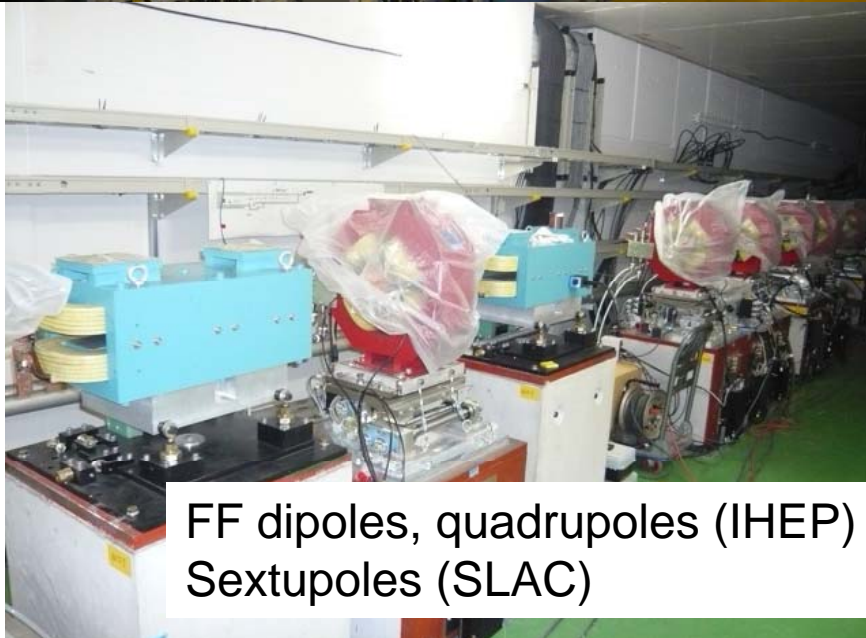
International contribution (2)



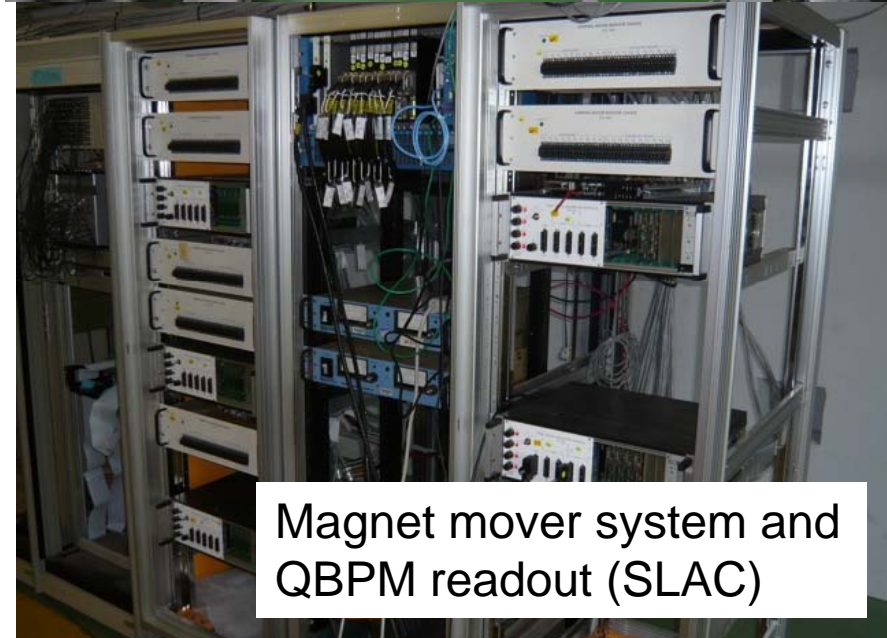
High Availability PS (SLAC)



Infrastructures, Cables (KEK)



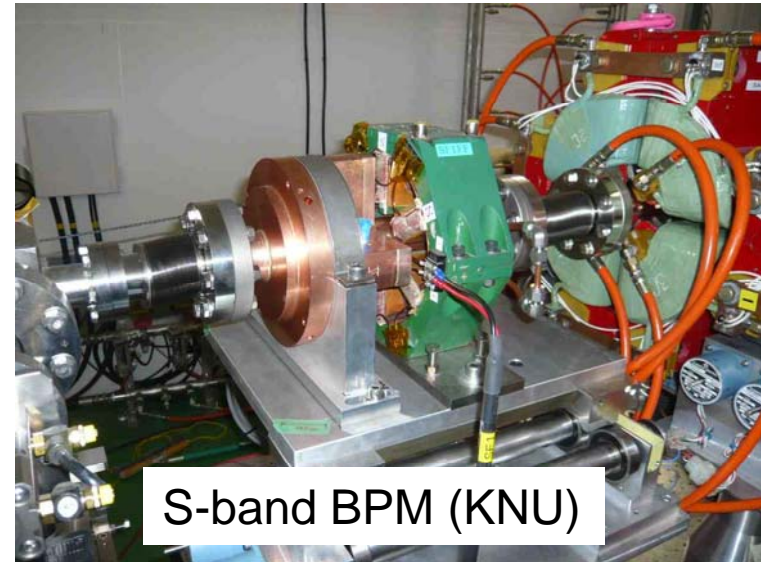
FF dipoles, quadrupoles (IHEP)
Sextupoles (SLAC)



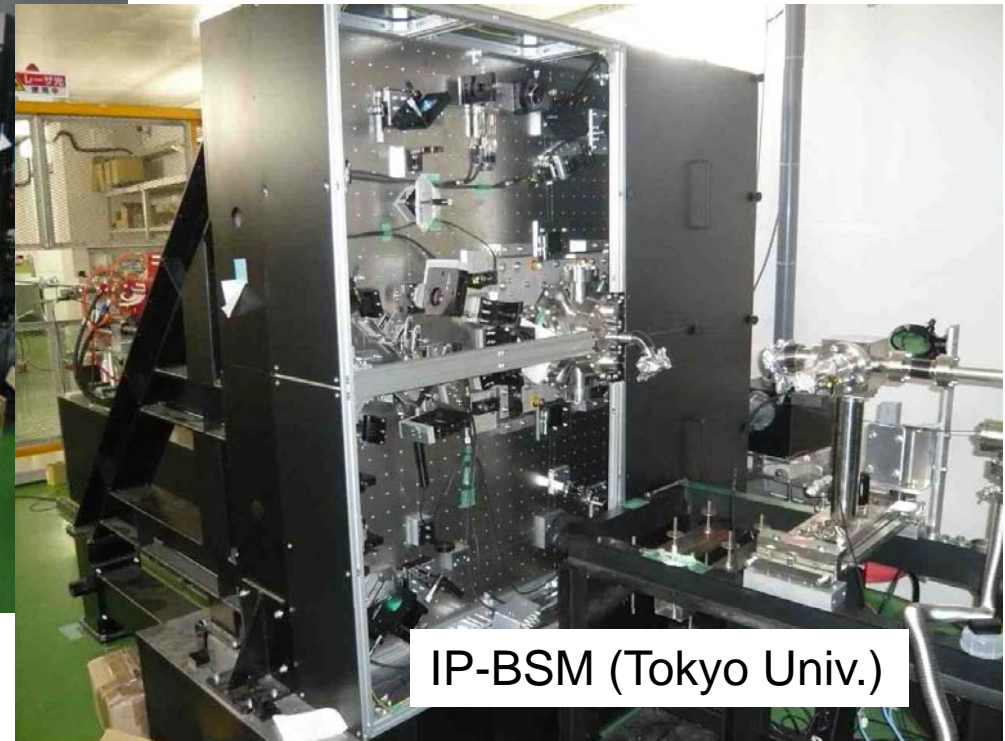
Magnet mover system and
QBPM readout (SLAC)

International contribution *(3)*

Final Doublet system
Magnets and Movers(SLAC)
Supports and Table (LAPP)

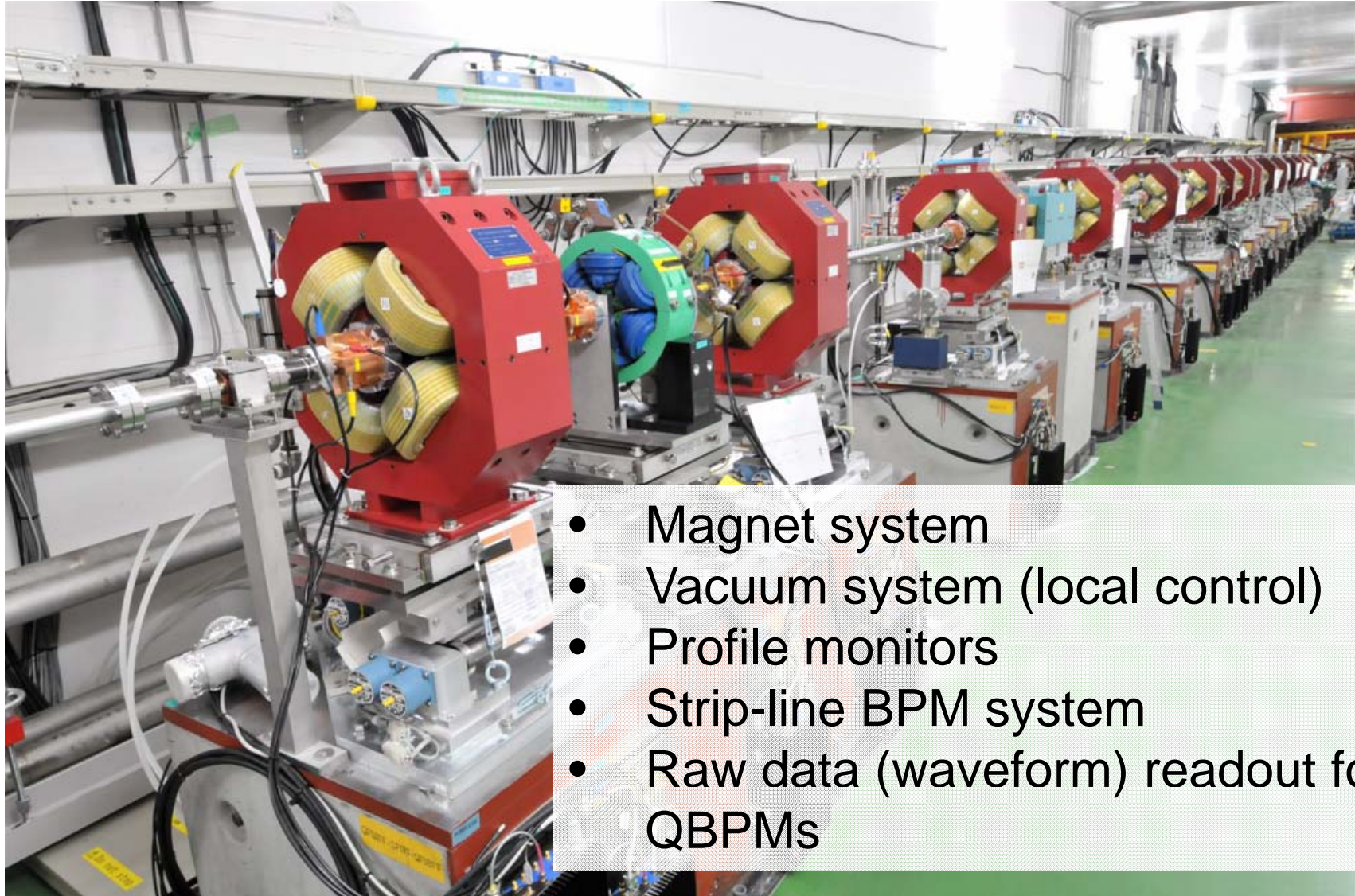


S-band BPM (KNU)



IP-BSM (Tokyo Univ.)

Finished works for ATF2 beamline



- Magnet system
- Vacuum system (local control)
- Profile monitors
- Strip-line BPM system
- Raw data (waveform) readout for QBPMs

Remaining Works for ATF2 beamline

Items will be done soon

- Remote control/monitoring of vacuum devices
- Alignment of Final Doublet system
- Software for QBPMs (C-band cavity BPMs)
- Installation of readout system for S-band cavity BPM
- Metal wire scanner control and Gamma detector installation
- Installation of Carbon wire scanner (SLAC)
- Integration of ATF/ATF2 control system
- IP-BSM commissioning by Master students (Tokyo Univ.)

Items will be installed in 2009

- Skew quadrupoles (in Apr. 2009)
- Laser wire (before March?)
- FONT (before Feb. 2009)
- IP-BPM (as soon as we set the FF optics)
- ...

Summary

- We expect the better injection efficiency by newly installed RF gun.
- DR emittance recovery is higher priority.
- We have a lot of remaining works for ATF2 and they should be finished soon.
- Commissioning of ATF2 will be started soon.