

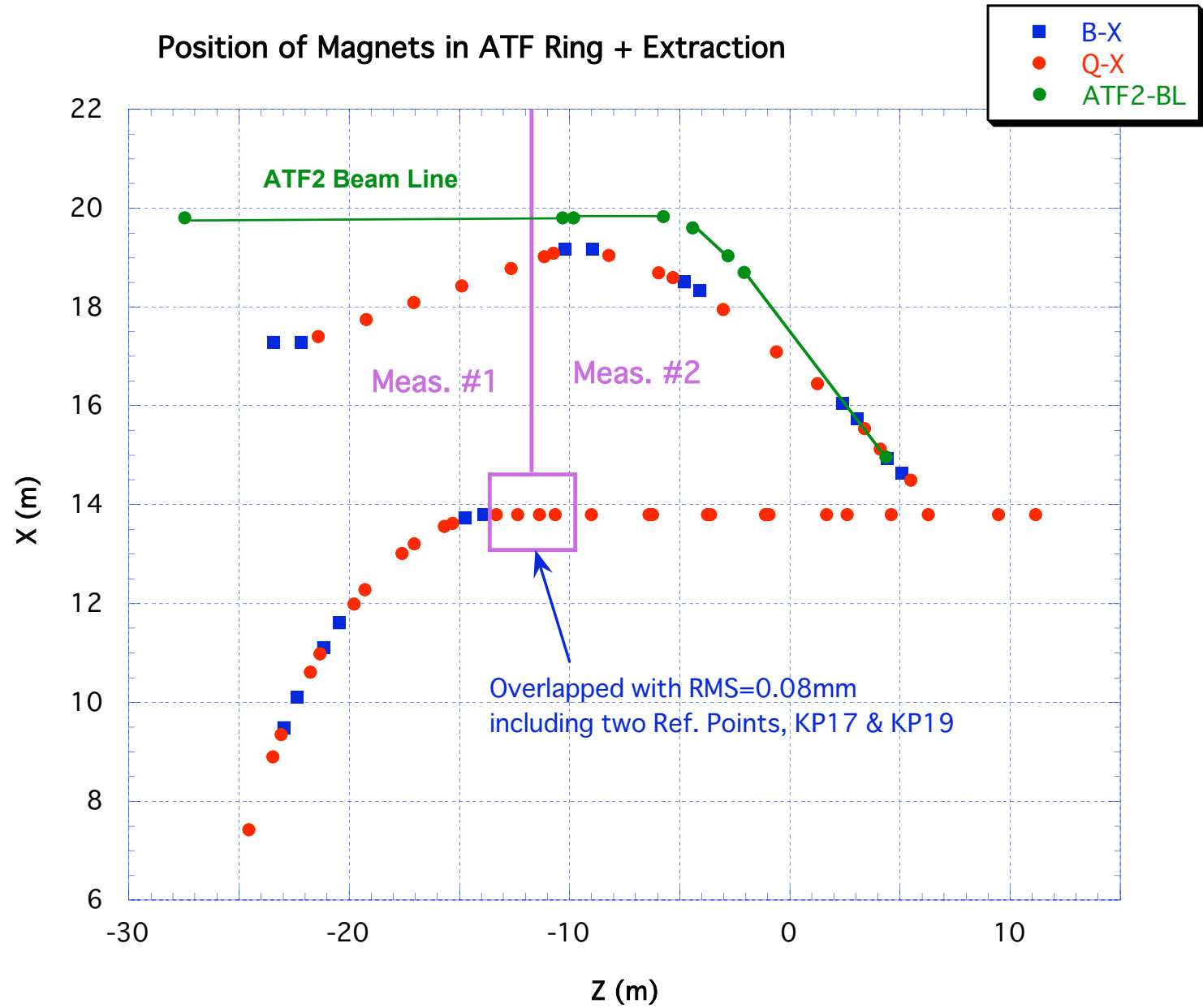
Survey of ATF Ring and Extraction Line, and Marking of ATF2 Beam Line

**R. Sugahara
March 30, 2007**

**Date: February 14 and 15 for survey
March 22 and 28 for marking**

**Member: R. Sugahara, S. Araki, M. Masuzawa
[Saubi] M. Takano and [e-Cube] Nakamura**

Layout around Beam Extraction

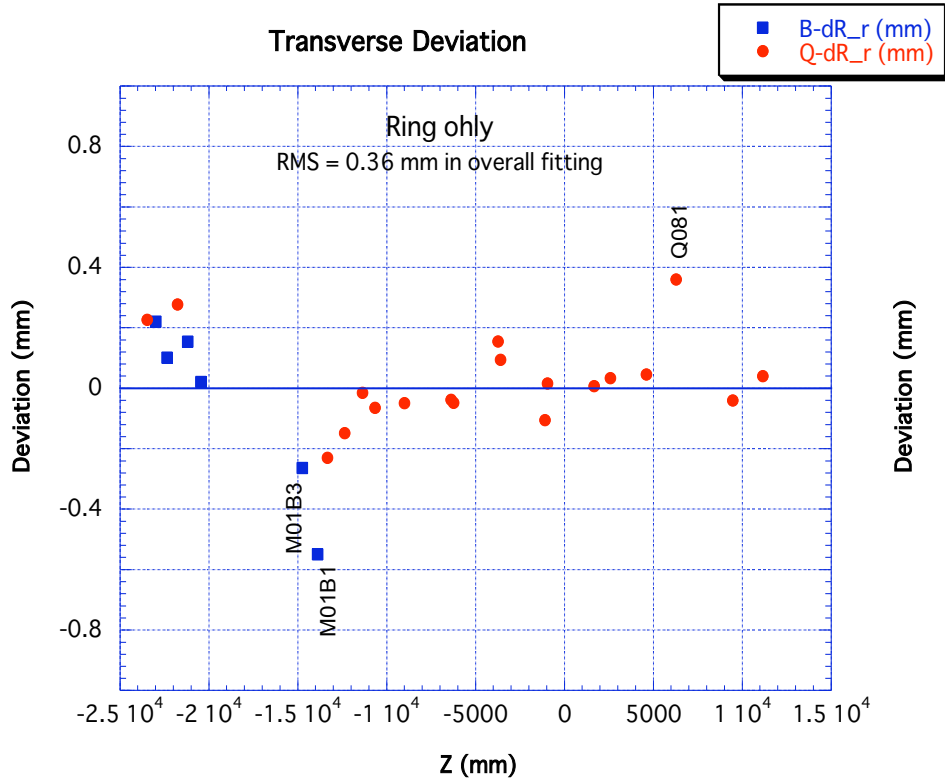


Ring Magnet Only

(RMS = 0.36mm in Fitting)

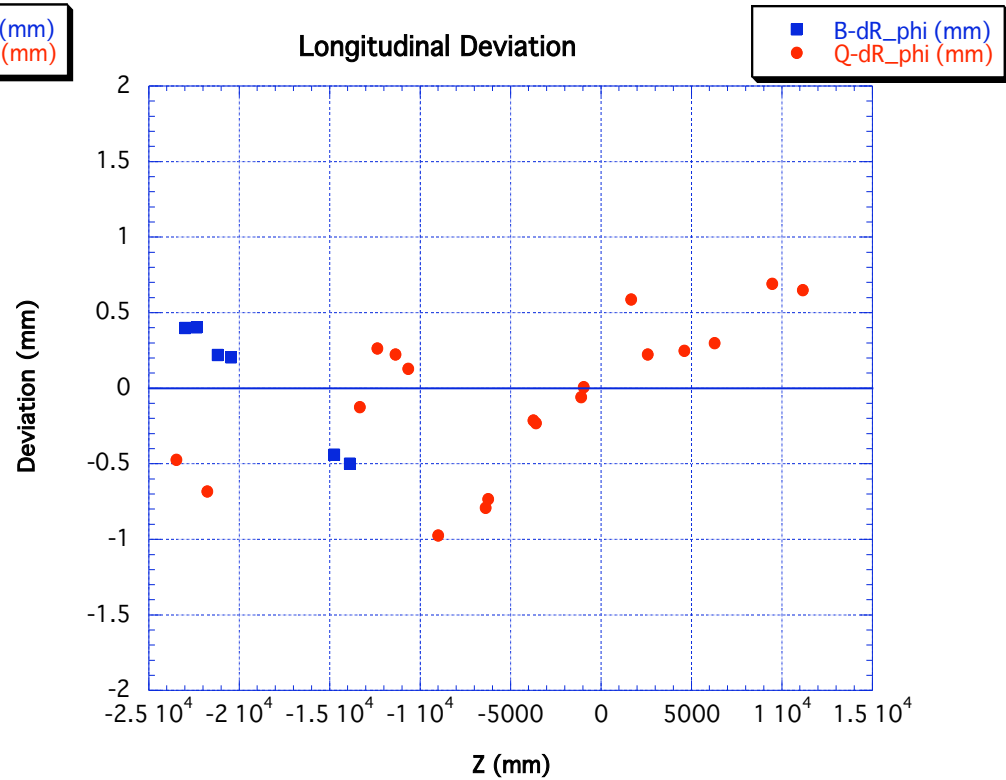
Perpendicular to the beam

Transverse Deviation



Along the beam

Longitudinal Deviation



Ring + Extraction Line

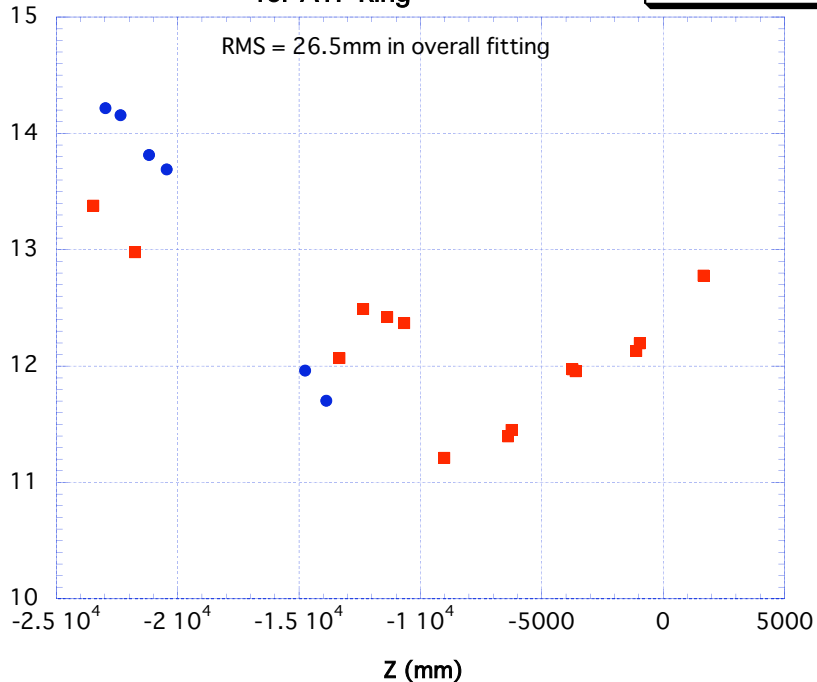
ext12.coord

Lattice for Ext. Line is **original(?)** one,
but **RMS** is as large as **26.5mm**

Deviation of Mag. Position along the beam

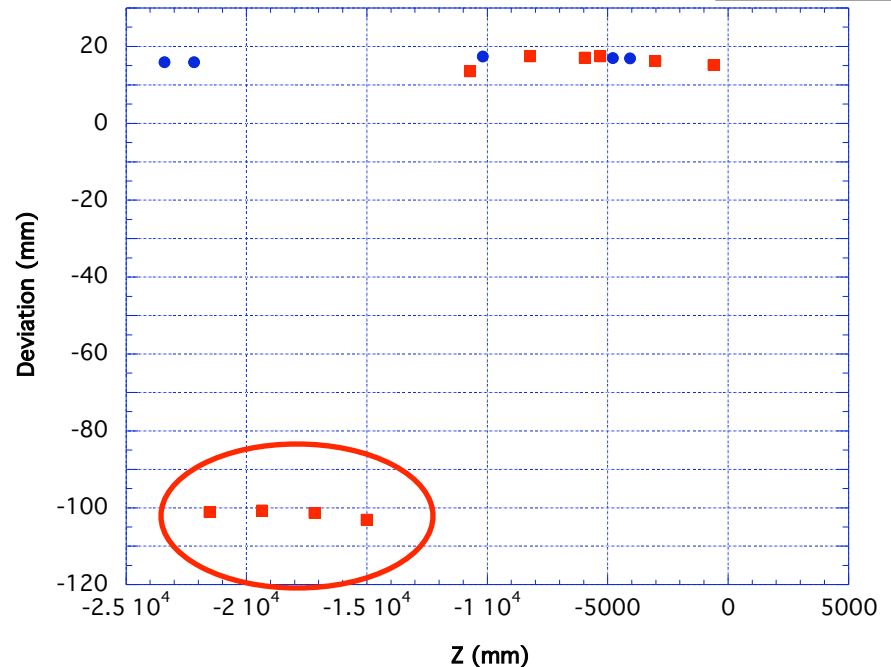
Longitudinal Deviation
for ATF Ring

• B_dR_phi (mm)
■ Q_dR_phi (mm)



Longitudinal Deviation
for Ext. Line

• B_dR_phi (mm)
■ Q_dR_phi (mm)



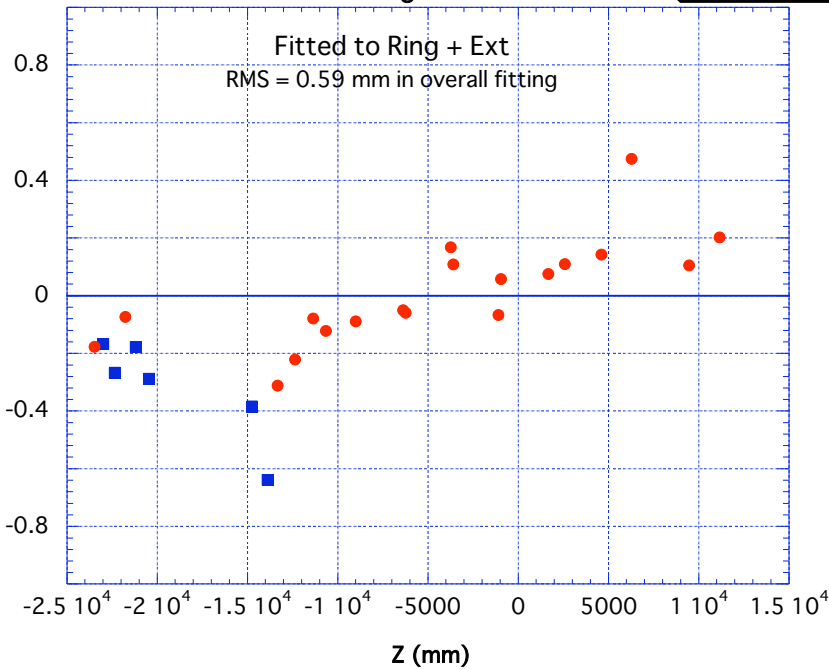
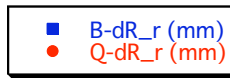
Ring + Extraction Line

atfext07feb08.coord

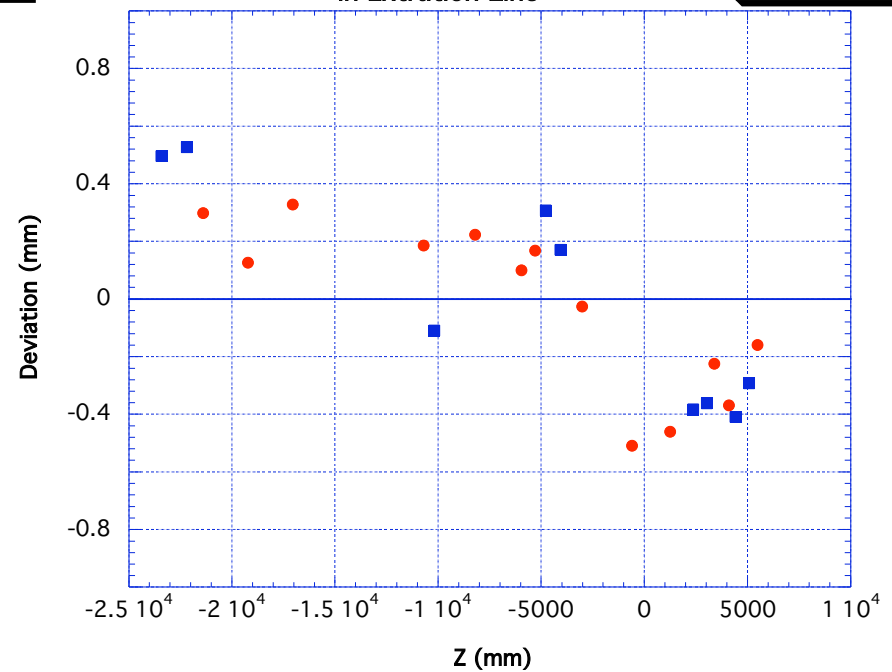
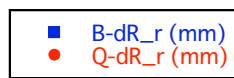
Lattice for Ext. Line is **new(?)** one,
RMS = 0.59mm

Deviation of Mag. Position perpendicular to the beam

Transverse Deviation
in Ring



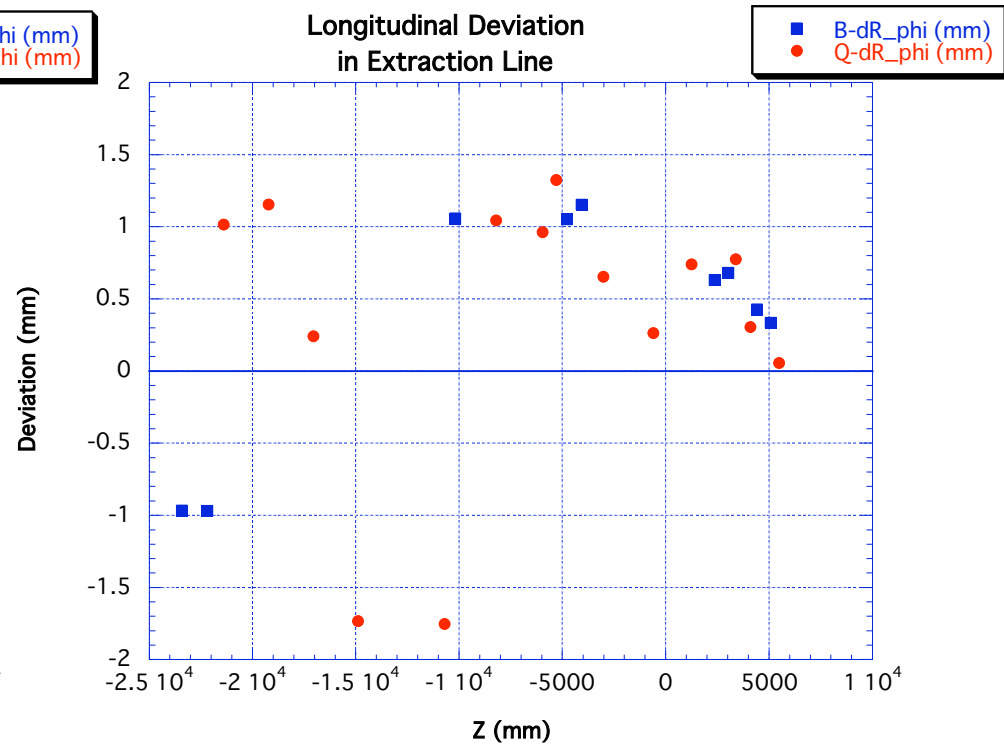
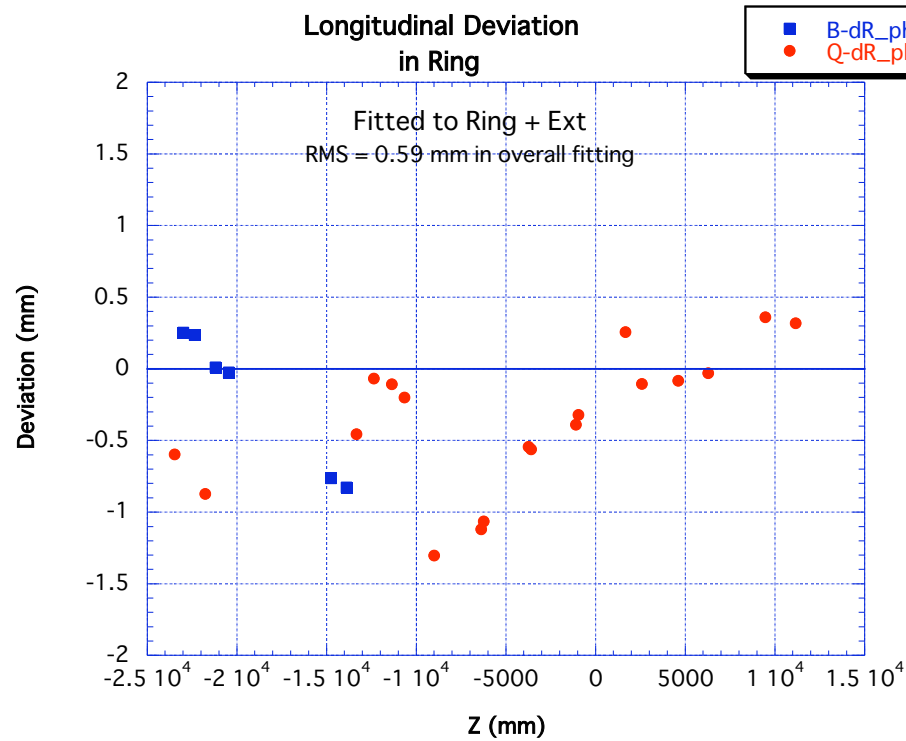
Transverse Deviation
in Extraction Line



Ring + Extraction Line (cont.)

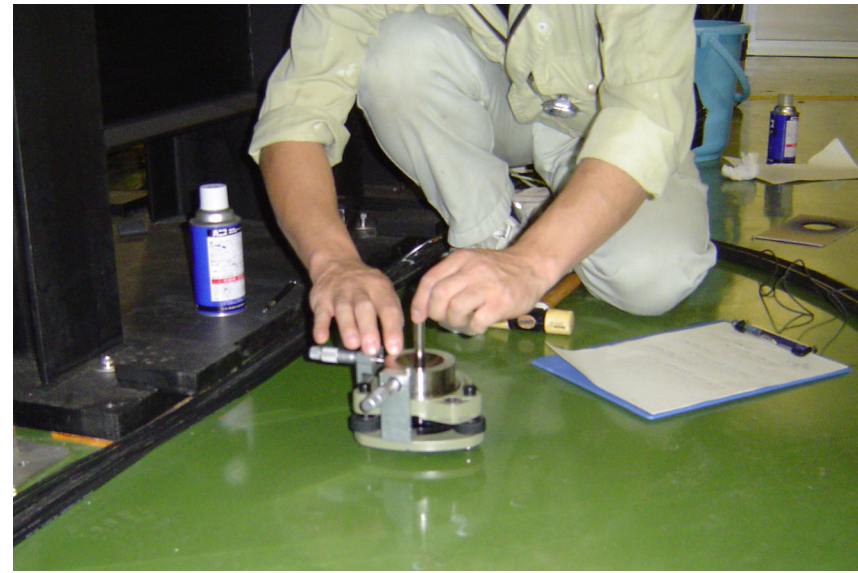
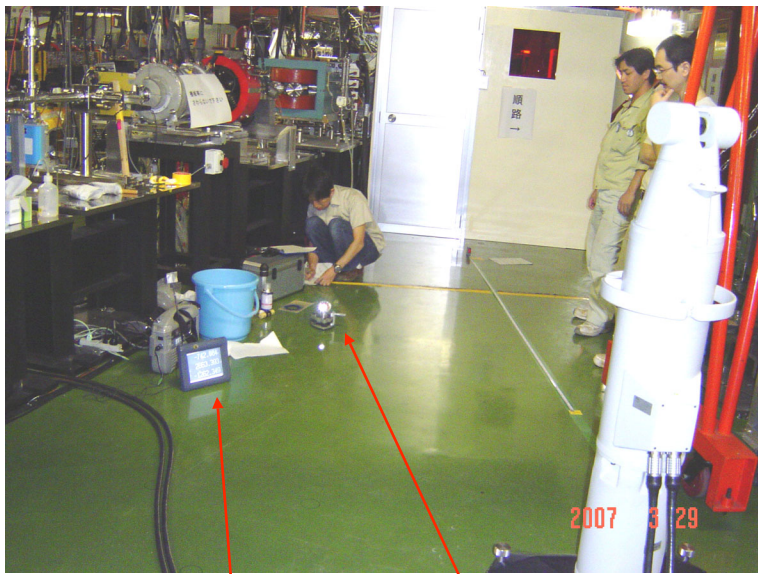
Lattice for Ext. Line is **new(?)** one

Deviation of Mag. Position along the beam



How to mark the ATF2 Beam Line?

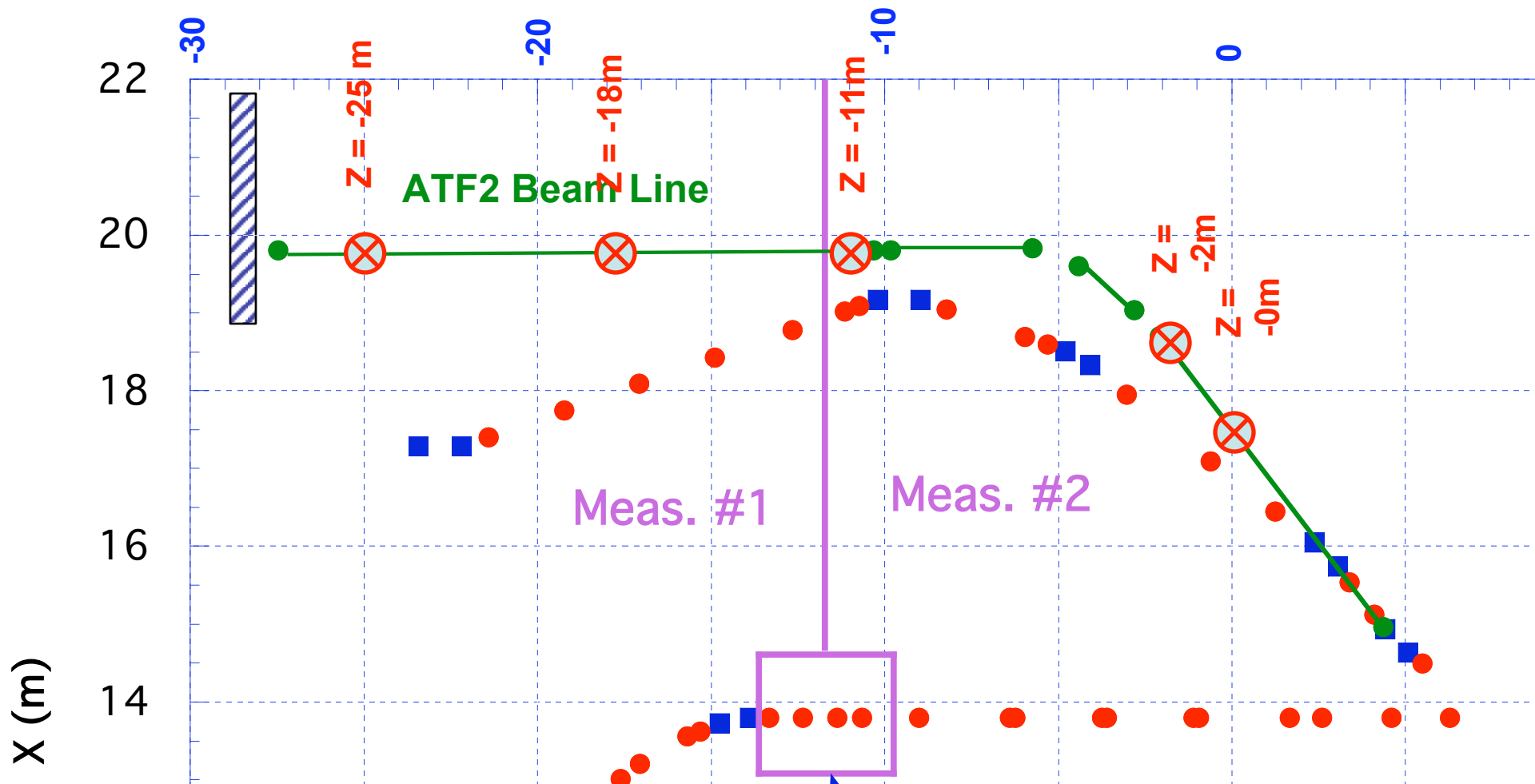
1. With the laser tracker, measure the magnet positions in the Ring and Extraction Line
2. Fit the **Ring Magnet** Positions to the Lattice by transferring and rotating tracker coordinates for magnets. No scaling.
3. Rotate and Transfer Extraction Line Magnet Positions using the coefficients obtained above. In this way, the probable Lattice coordinates for the Extraction Line Magnets were obtained.
4. Marked several points along the ATF2 Beam Lines using probable Lattice coordinates for the Extraction Line Magnets as the reference



Marking points along the ATF2 Beam Line



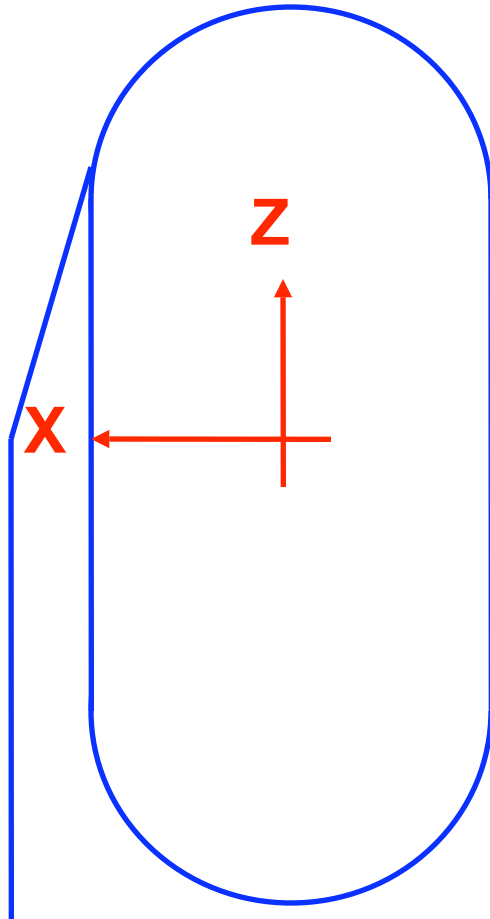
Marked the ATF2 Beam Line on March 22 and 28



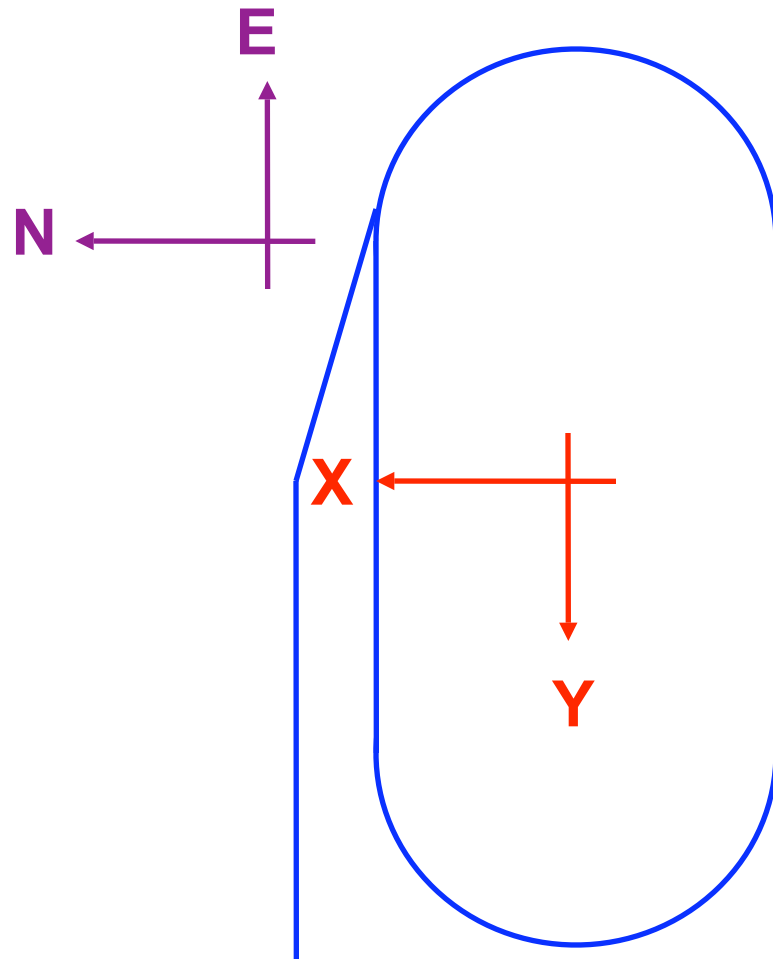
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Definition of coordinate system

<Current definition>

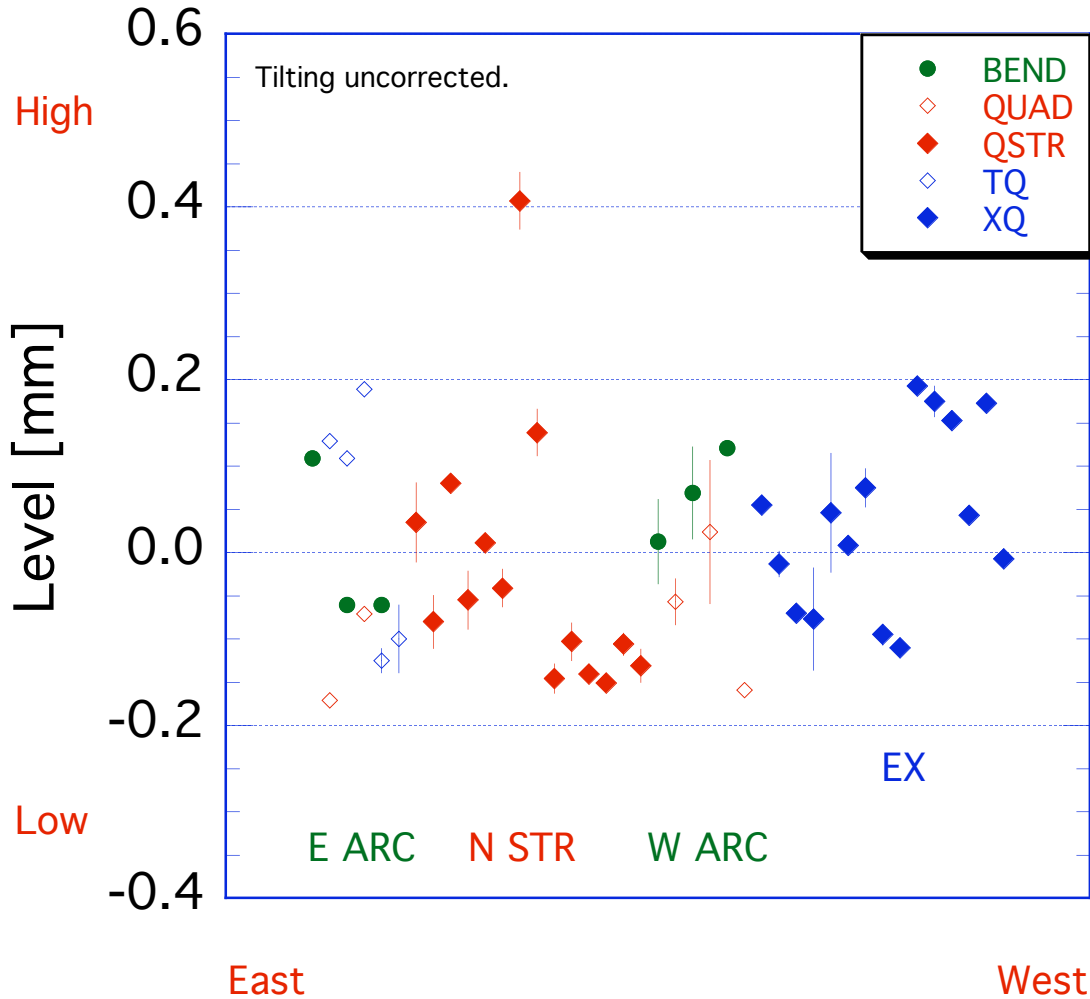


<Proposed definition>



N-STR Level

27MAR07



DEC 06

