

*Summary of the discussion  
for the commissioning session*

*2<sup>nd</sup> ATF2 Project Meeting*

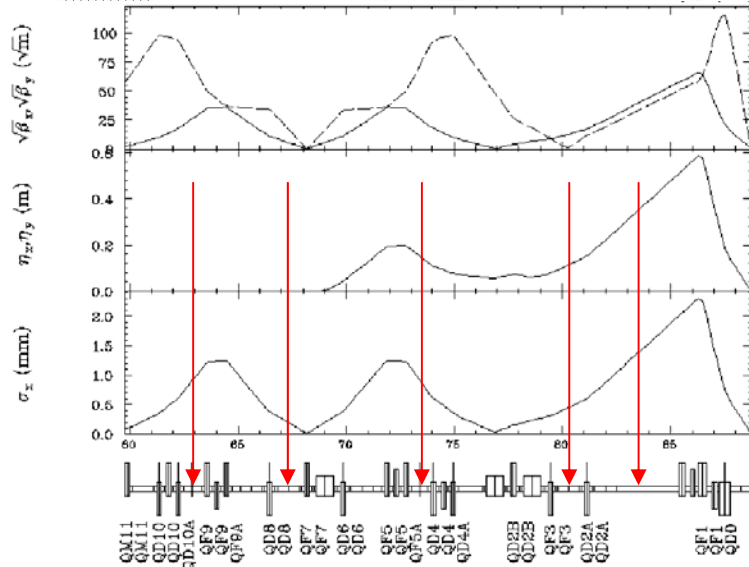
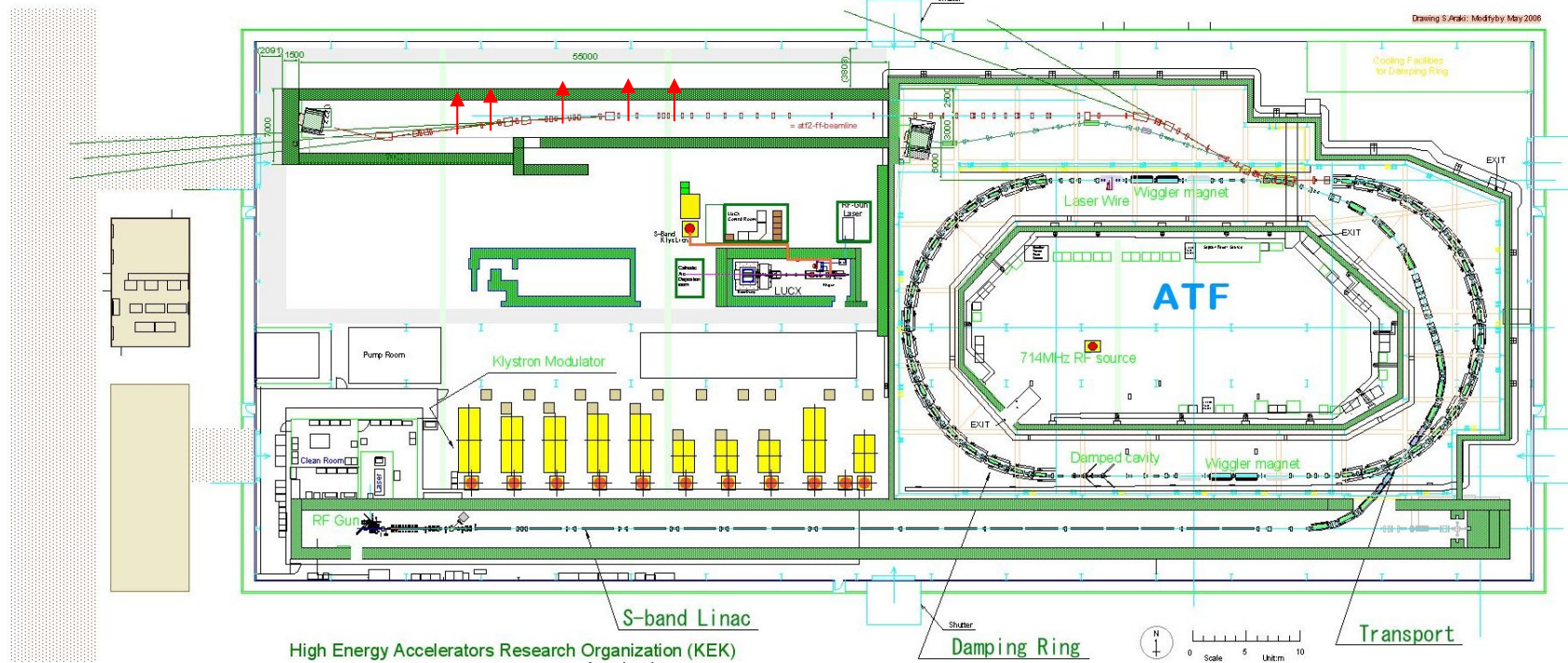
*KEK, Tsukuba, Japan*

*6/ 1/ 2006*

*T.Okugi (KEK)*

*What we decided are ...*

# Strip-line BPMs ATF2 LAYOUT



*We put 5 strip-line BPMs for the initial commissioning in ATF2 FF optics.*

*The location is separated by almost 90 degrees each other.*

# Screen Monitors

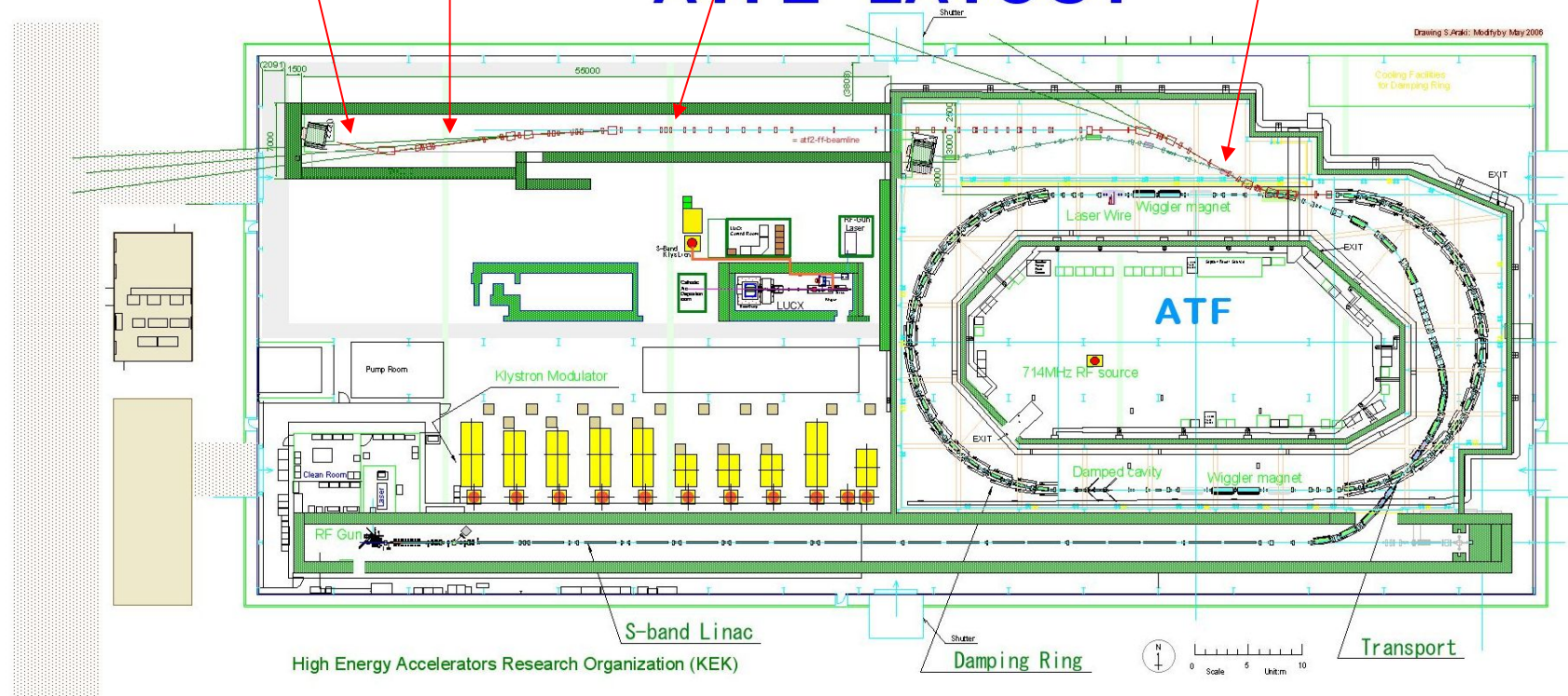
*To confirm the beam profile at front of the beam damp*

*To confirm the beam profile at the entrance of the final doublet*

*To confirm the beam profile at the entrance of the collimator*

*To measure the momentum spread*

## ATF2 LAYOUT



*We put 4 screen monitors in the beamline.*

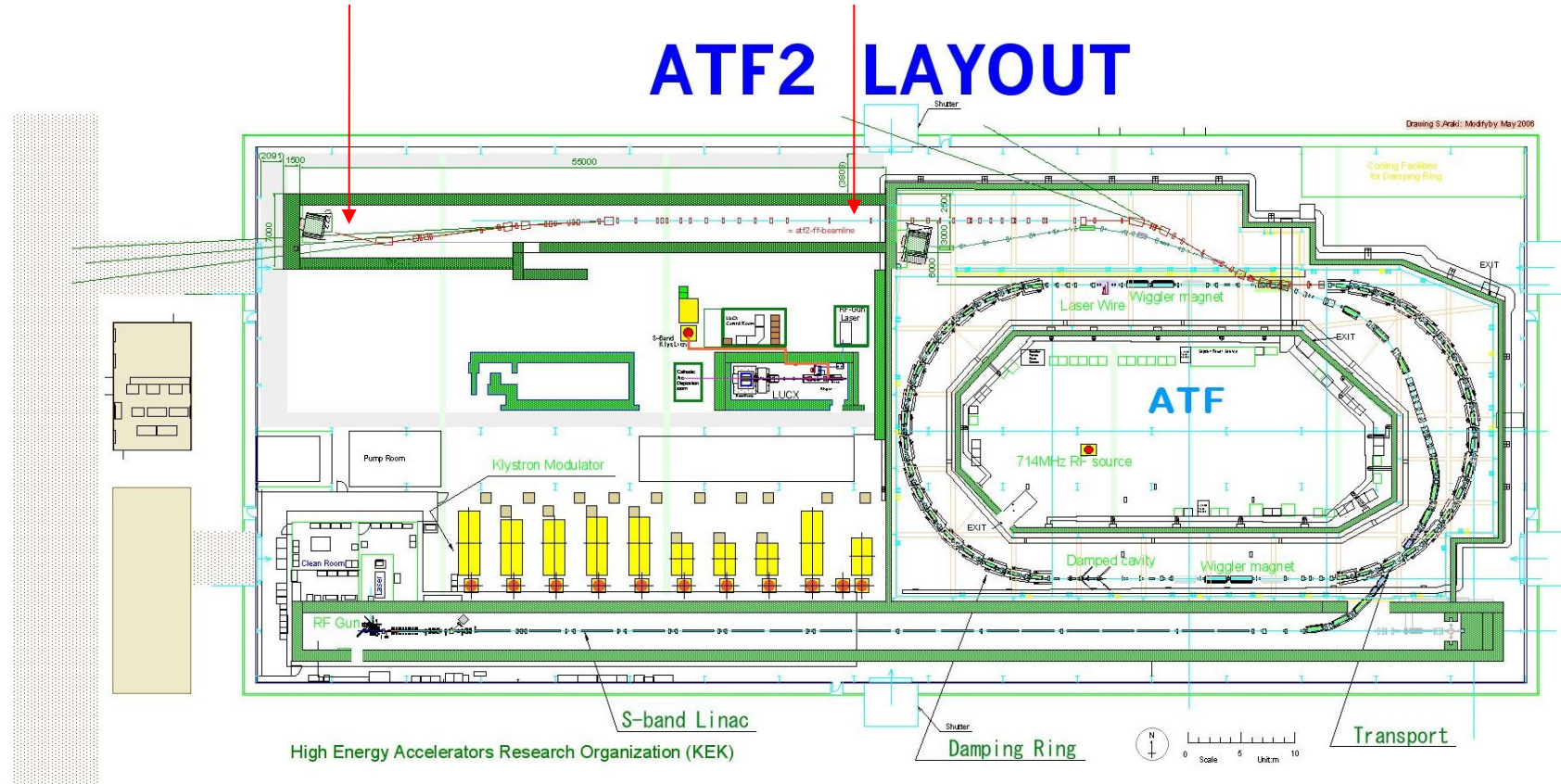
*All of the location to put screens are designed to be large size, and enough to use present screen systems.*

*Since we already have 4 screen monitors, we **don't have additional screen monitors.***

# ICTs ( Integrated Current Transformers )

*Put ICT at the end of the beam line.*

*Put ICT at middle of the beam line.*

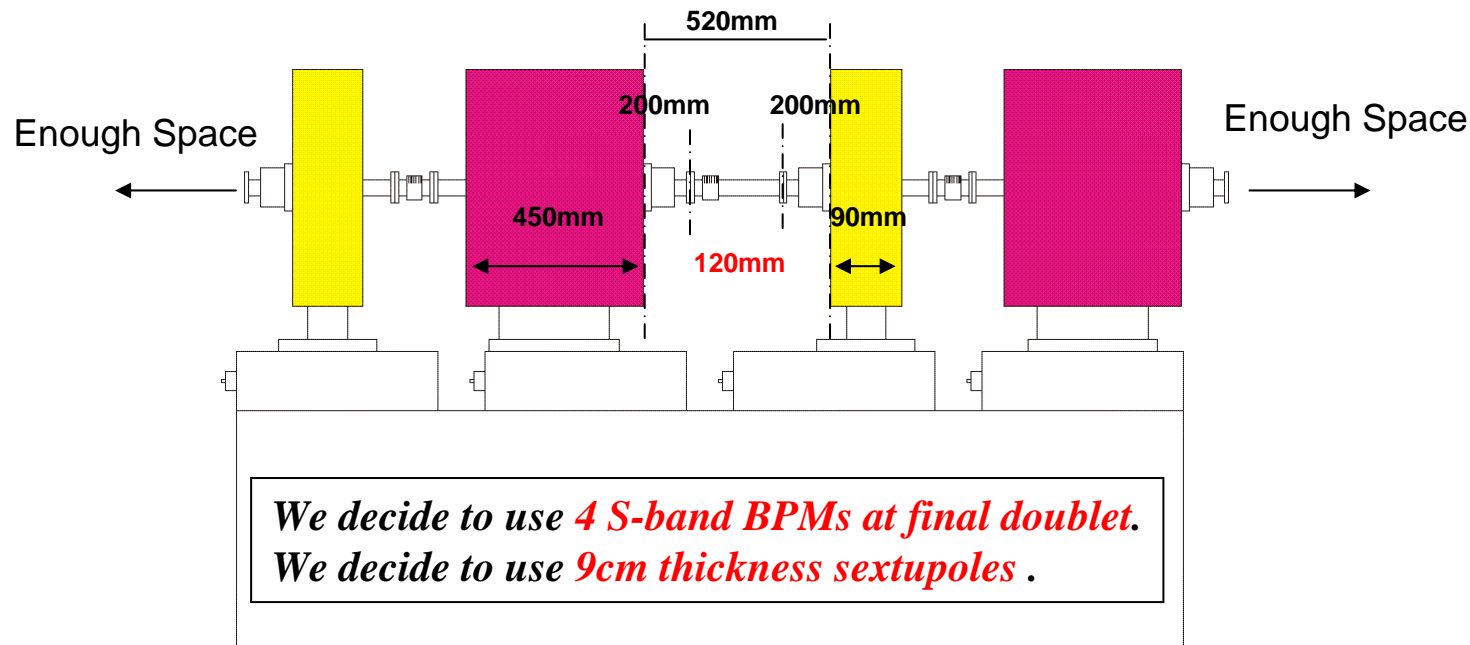


*In order to confirm the beam loss in the ATF2 FF system,  
we put at least 2 ICTs in the beamline.*

*Since we already have 1 ICT in present extraction line, we need **1 additional ICT.***

*Problems, which we have an impact  
for ATF2 beam line design or magnets are ...*

## *Around Final Doublet – Monitor Configuration*



*The coils for sextupole will be rewiring.*

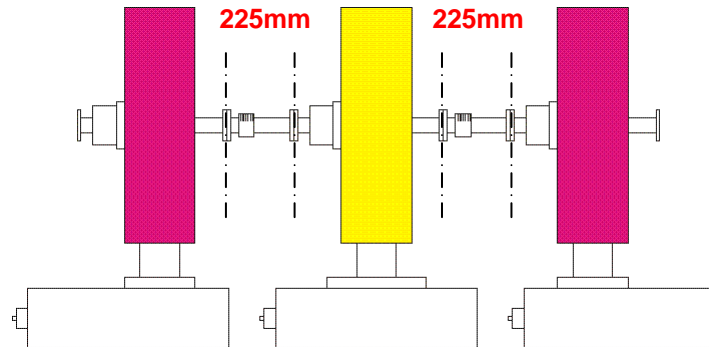
*We will make an adapter to avoid the interference between the QC3 coil and S-band cavity BPM.*

*What we should do is to estimate the length of the adapter for quadrupole.*

*If the length of adapter is shorter than 20mm,  
we can use the 100mm bellows chamber.*

*If **not**, we will consider to use shorter bellows chamber  
or to make the distance between quadrupole and sextupole wider by putting counter-weight  
on sextupole mover  
or to make the suport table lengthen.*

## *Around SF6 and SF5 – Collimator Configuration*



*In the commissioning session, we decided that ... .*

*We decide to use 9cm thickness sextupoles for SF5 and SF6.*

*We decide not to put the collimators around SF6 to avoid the laser wire background.*

*We decide to put the 15mm $\phi$  fixed collimators around SF5.*

*We must put the 5cm bellows at the both side of collimators.*

*But, some guys requested in the private communications after the session*

*Laser wire group suggested that the collimators around SF5 is also not good for them.*

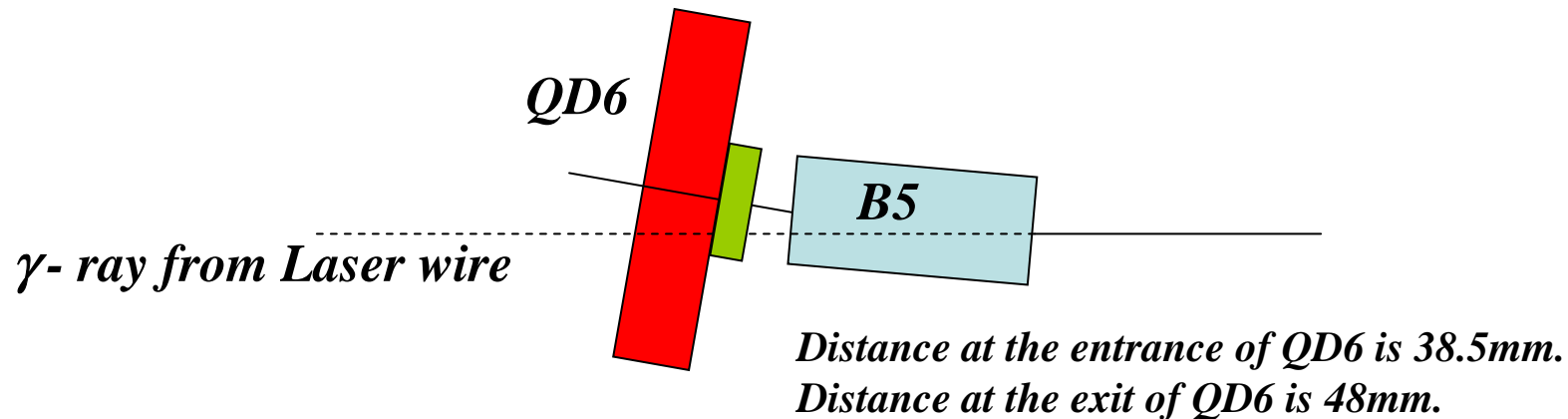
*Shintake monitor group suggested*

*that the collimators should be movable and need both X and Y directions.*

*We need more discussion with laser wire group and Shintake monitor group.*



## *Around QD6*



*We decide to use the **C-band cavity BPM for QD6**, too.*

*Inference of  $\gamma$ - ray path and flange will be avoided by using the special type flange.*

*Inference of  $\gamma$ - ray path and cavity BPM will be avoided by using the special adopter.*

### *Requirement from Laser wire group*

*The clearance of  $\gamma$ - ray at QD6 should be larger than 50mm  $\phi$ .*

*However, the aperture of  $\gamma$ -ray is limited by the upstream magnet and the cavity BPMs.*

*Is this clearance actually necessary ?*

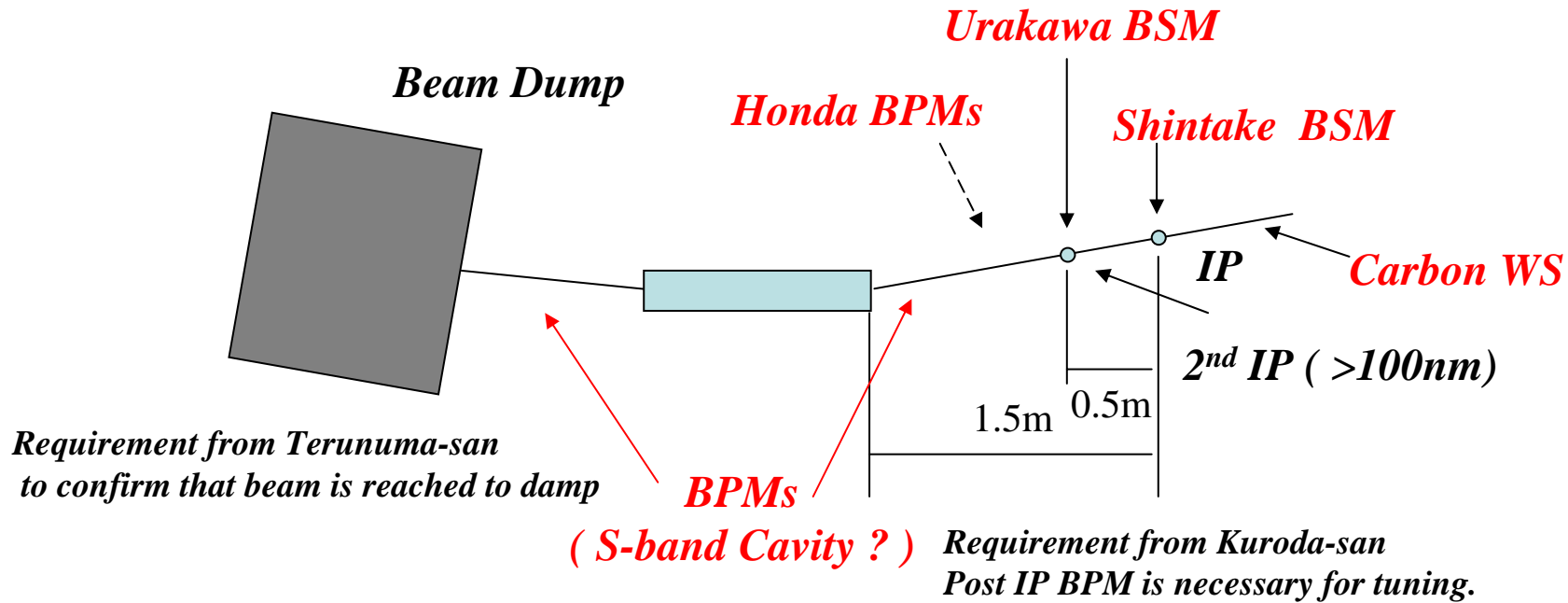
*Unfortunately, we cannot make a good idea for the problem in the meeting.*

### *What we can do is ...*

- 1) To evaluate the **actual number of the  $\gamma$ - ray clearance**.*
- 2) To make a special quadrupole magnets.*
- 3) To move the position of LW to downstream. ...*

*Problems, which we have small impact  
for ATF2 beam line design are ...*

## *Around IP – Monitor Configuration*



*We want to put **many beam diagnostic devices** in the IP region and the post IP.*

*We don't have **a clear conclusion** where are their locations in the meeting.*

*However, these location **is not strong impact** to the design of the ATF2 beam line.*

*We have a time to discuss, but all of the monitors are important for ATF2.*

*We need to be continued these discussion ...*

# Beam Line for Laser Wire Scanner

*We must decide where is the LW location in beam line.  
We found 4 laser wire chamber locations (see next slide).  
We decide to use the **C-band cavity BPMs** at the WS region.  
The discussion of the laser wire location will be done **within the designed beam line**.*

*The following questions are come from laser wire group.*

*1) Is it possible to change **the laser wire chamber location to downstream** ?  
( in order to make small  $\gamma$ ray size at the QD6 )*

*-> We have **some space to put laser wire chambers**,  
but the locations are just **matching section**,  
we must investigate whether the locations are appropriate for laser wire or not.*

*2) Is it possible to **remove the collimator** for Shintake monitor from beam line ?*

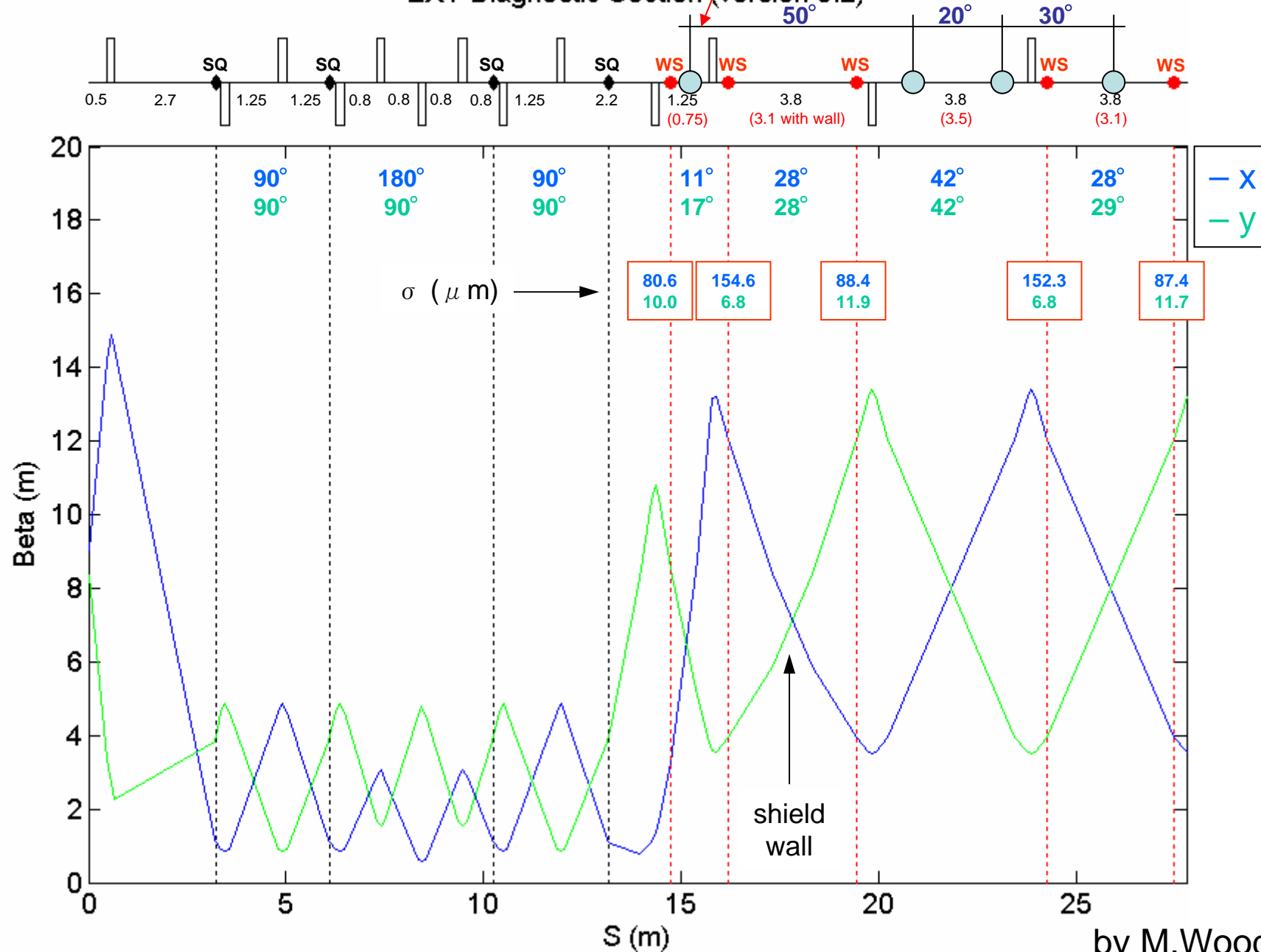
*-> It is better to use **the movable collimators**.  
We must investigate whether the movable collimators can be put or not.*

*3) Can we make **a small beam size** at the ATF2 laser wire location ?*

*-> It is **possible to make a small beam size** at laser wire IP,  
but no one knows **whether can we pass the beam to the damp with small background**.  
We cannot make an answer for the question now without any investigations.*

**We don't have space to put additional BPMs**

### EXT Diagnostic Section (version 3.2)



by M.Woodley