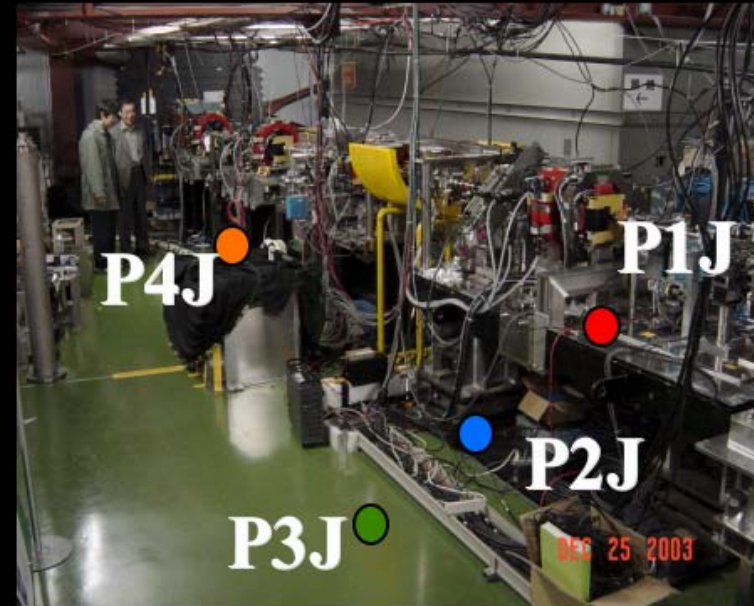
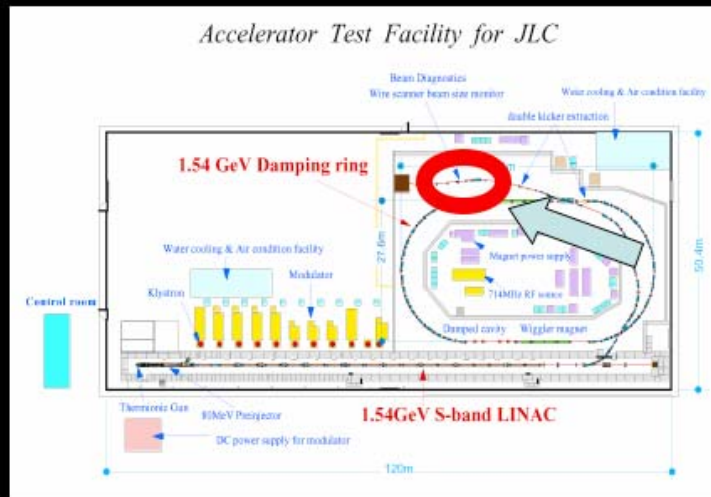


How high frequency we care

if we need the stabilization of 1nm level?

【Measurement around the beam line (1)】

- Measurement Points -



- Observation -

2pm, Feb. 10, 2004 – 6pm, Feb. 11, 2004

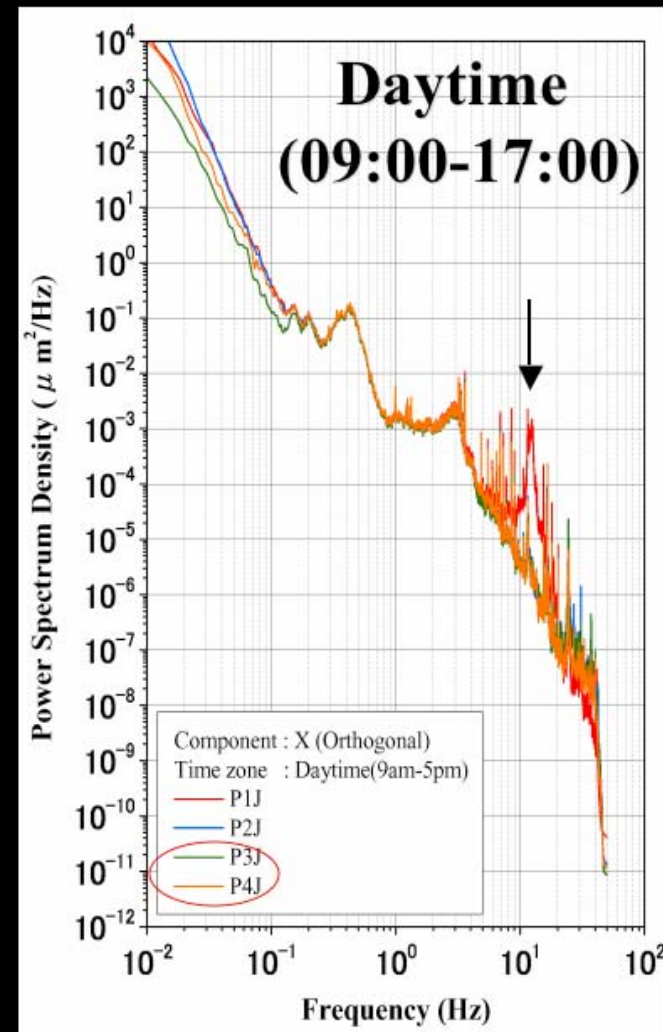
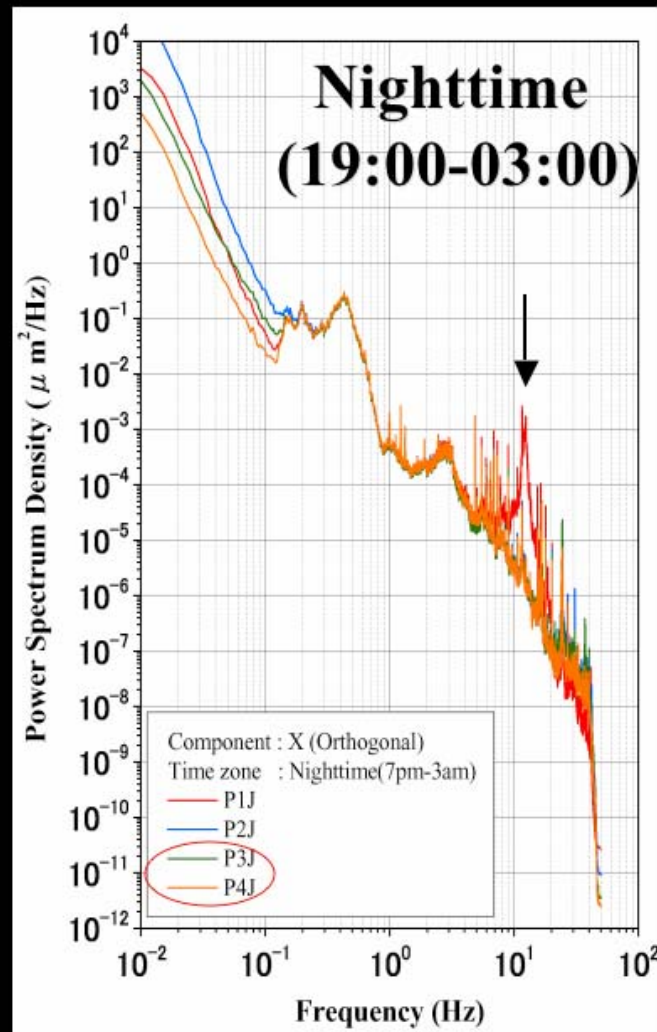
30 minutes consecutive duration for 28 hours



【Measurement around the beam line (8)】

“Power Spectrum Density (1)“

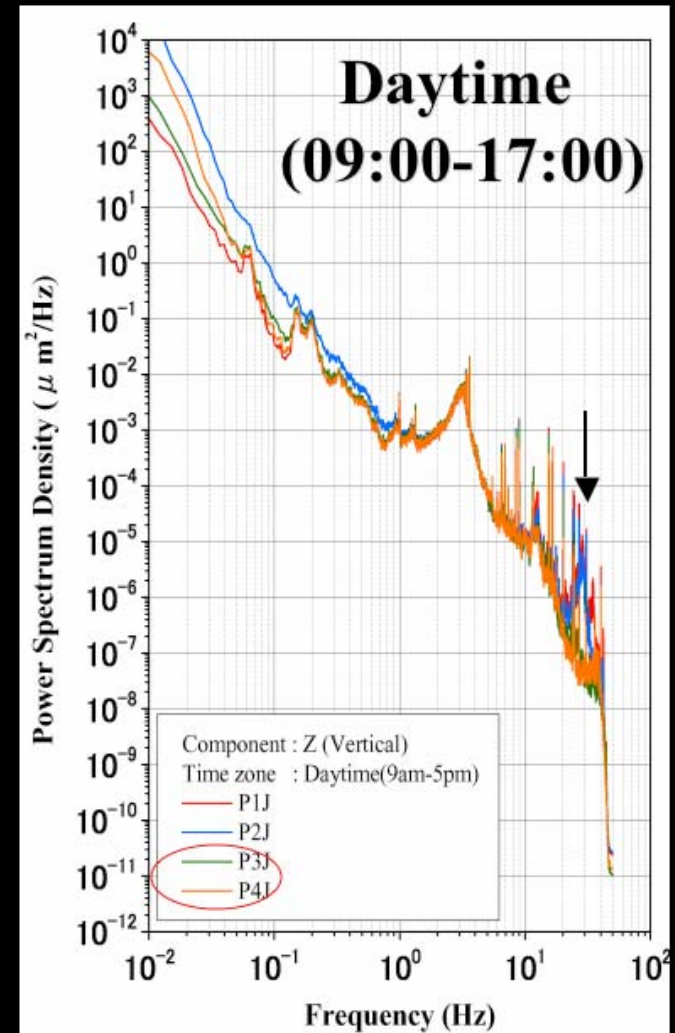
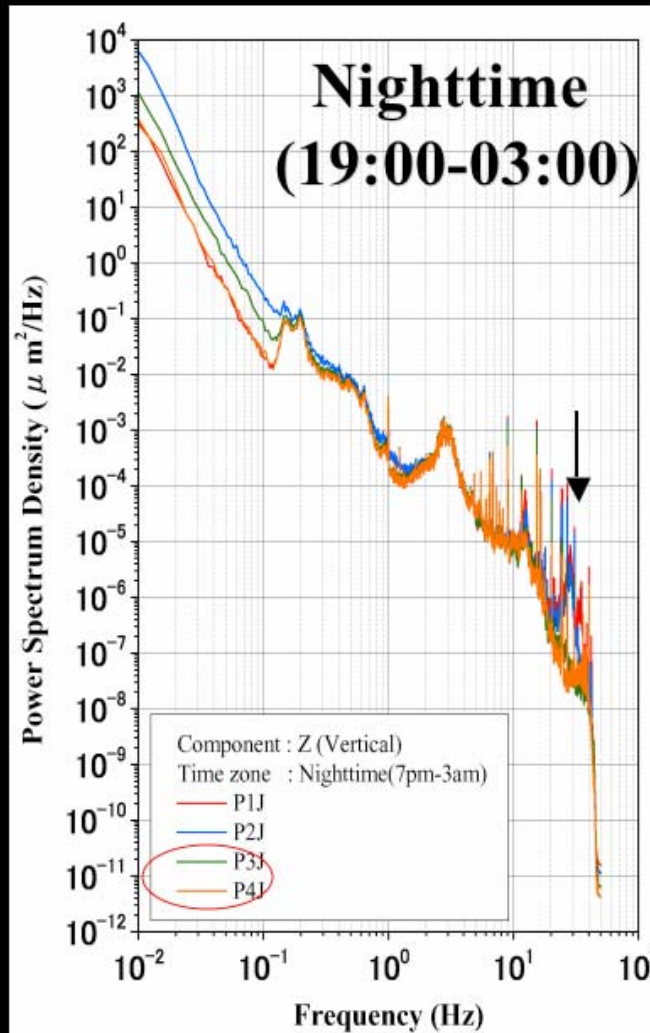
Component : X (Orthogonal to the beam line)



【Measurement around the beam line (10)】

“ Power Spectrum Density (3) “

Component : Z (Vertical)

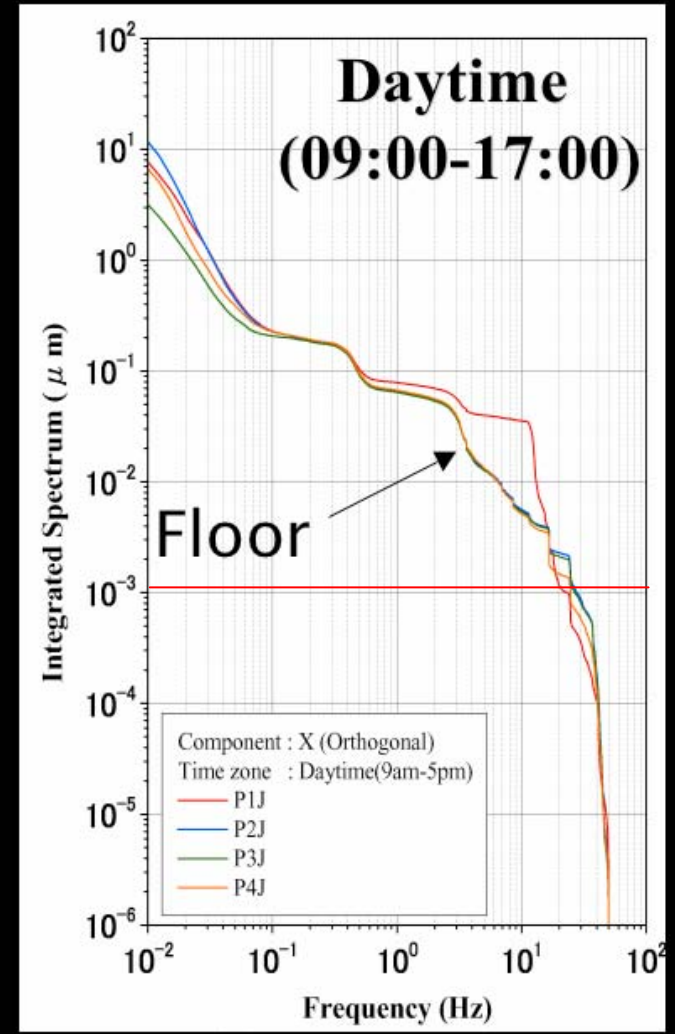
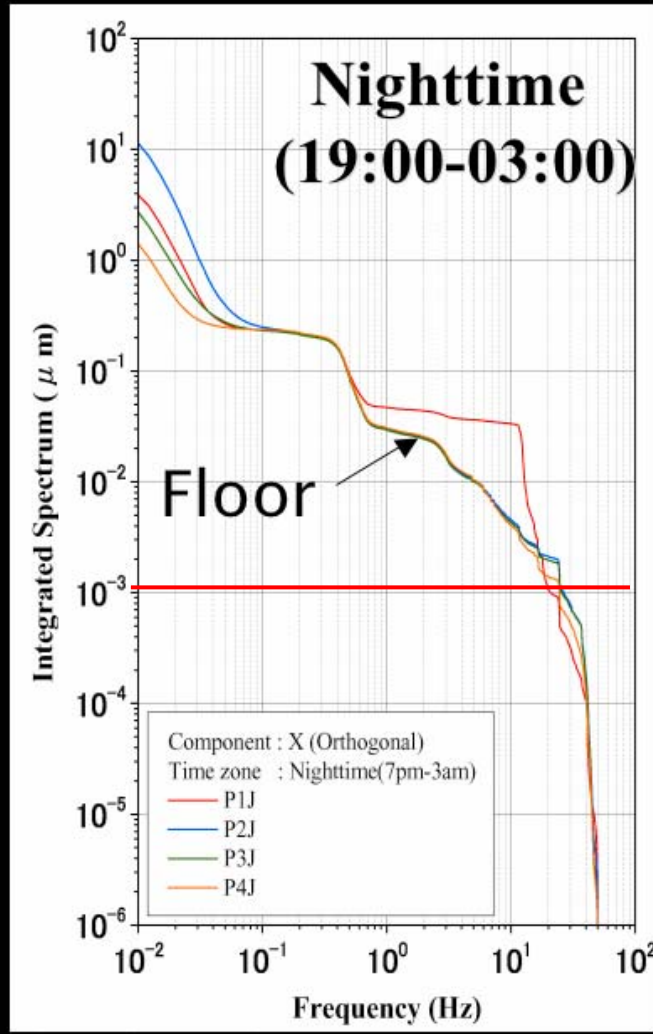




【Measurement around the beam line (11)】

“ Integrated Spectrum (1) ”

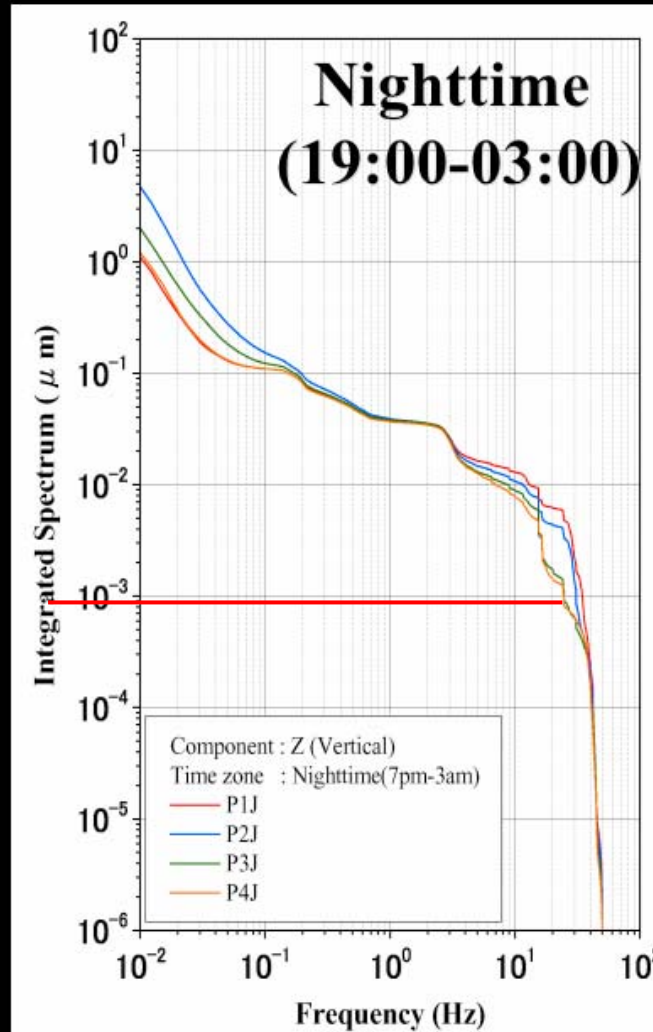
Component : X (Orthogonal to the beam line)



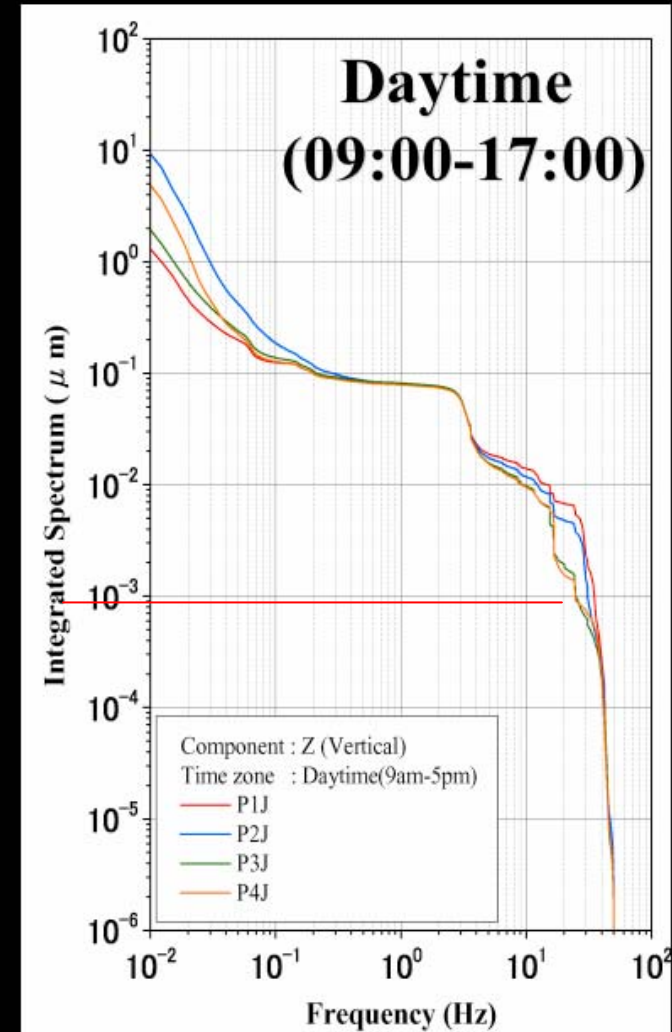


【Measurement around the beam line (13)】

“ Integrated Spectrum (3) “ Component : Z (Vertical)



Chigasaki Research Institute



J-Power / Electric Power Development Co.,Ltd.

--> Frequency $< 30\text{Hz}$, we care.

Wave length $\sim 300\text{m}$? for $f=1\text{Hz}$

$\sim 30\text{m}$? for $f=10\text{Hz}$

Don't we need to worry about GM in $f < 10\text{Hz}$?

One common movable table is the solution?

--> Let's measure the speed (wave length) and coherent length of GM at ATF ring

If we use the CLIC table:

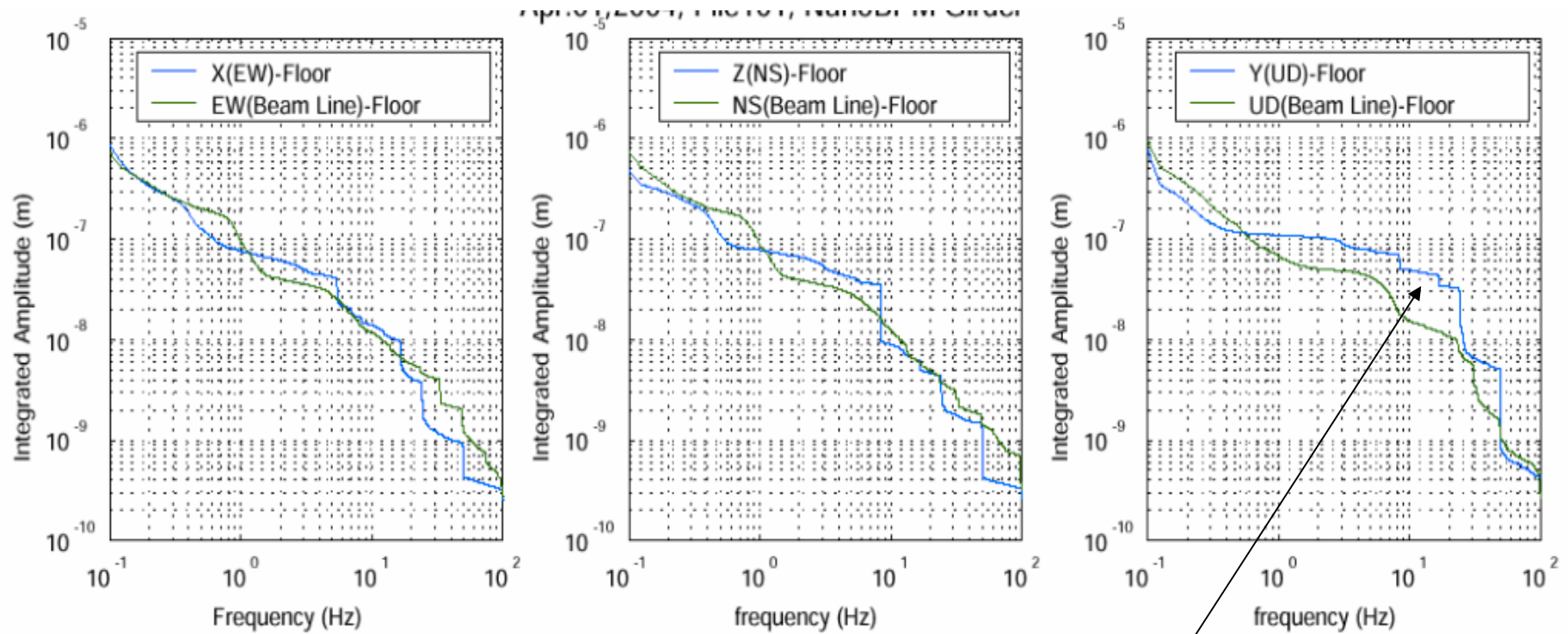
- Can Cherrill design final doublets and sextupoles so that the magnet center is 1.2m high from the floor with current CLIC table?
→ We do not need to modify the current table.
- We have two tables, one for FD magnets and another one for Shintake monitor.
How can we stabilize two tables at FF point?
- CLIC table needs refurbishment for isolators costing 4x??? Euros.

< - - >

Sugahara's recommendation on CLIC table

- Measure slow motion with displacement sensors w.r.t floor
- Think how to isolate from the acoustic influence
- How to do the initial alignment? Check the offset height when they turn on piezoelectric transducers.

2. Measurement at ATF beam line & ATF clean room by H. Yamaoka using acceleration sensors at ~14:00 April 1, 2004.



Integrated amplitude

Difference is clear in the vertical direction.