

KAGRA防振系

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[共同利用(KAGRAのための低周波防振装置の研究)参加者]

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共同利用研究成果発表会

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Configuration of vibration isolation system

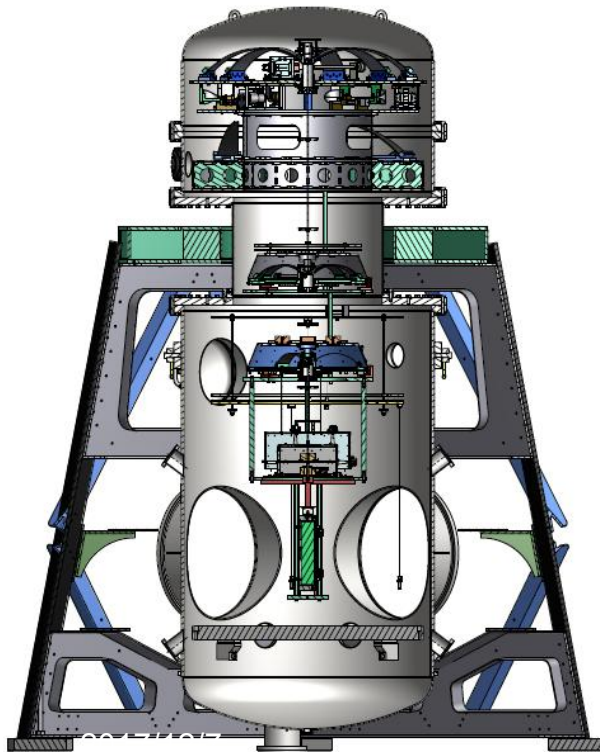
Type-A: for cryogenic mirrors

Type-B: for room temperature mirrors

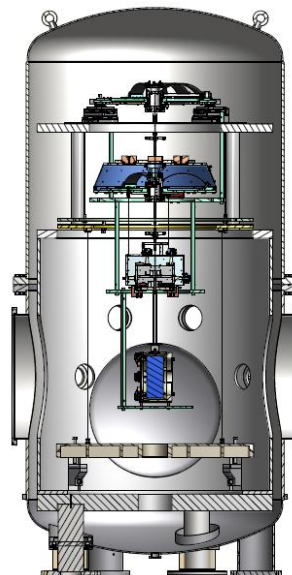
Type-Bp: simpler Type-B

Type-C: for small optics

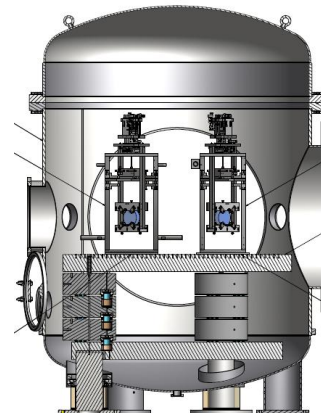
Type-B



Type-Bp



Type-C



Type-A



Seismic Attenuation System (Type-B)

Pre-isolator
(PI)

Top Filter (TF)

Inverted Pendulum (IP)

Filter chain

Standard Filter (SF)

Filter1~3 in Type-A

Filter1 in Type-B

Bottom Filter (BF)

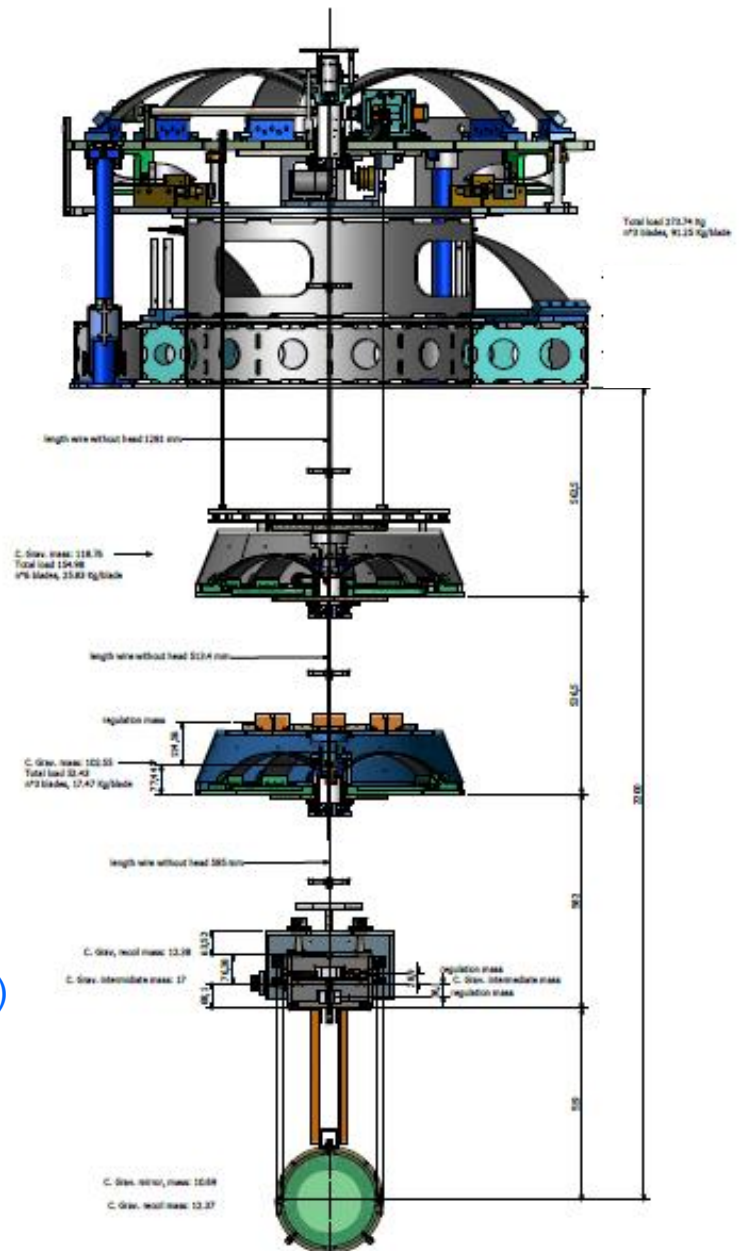
Payload
(PAY)

Intermediate Mass (IM)

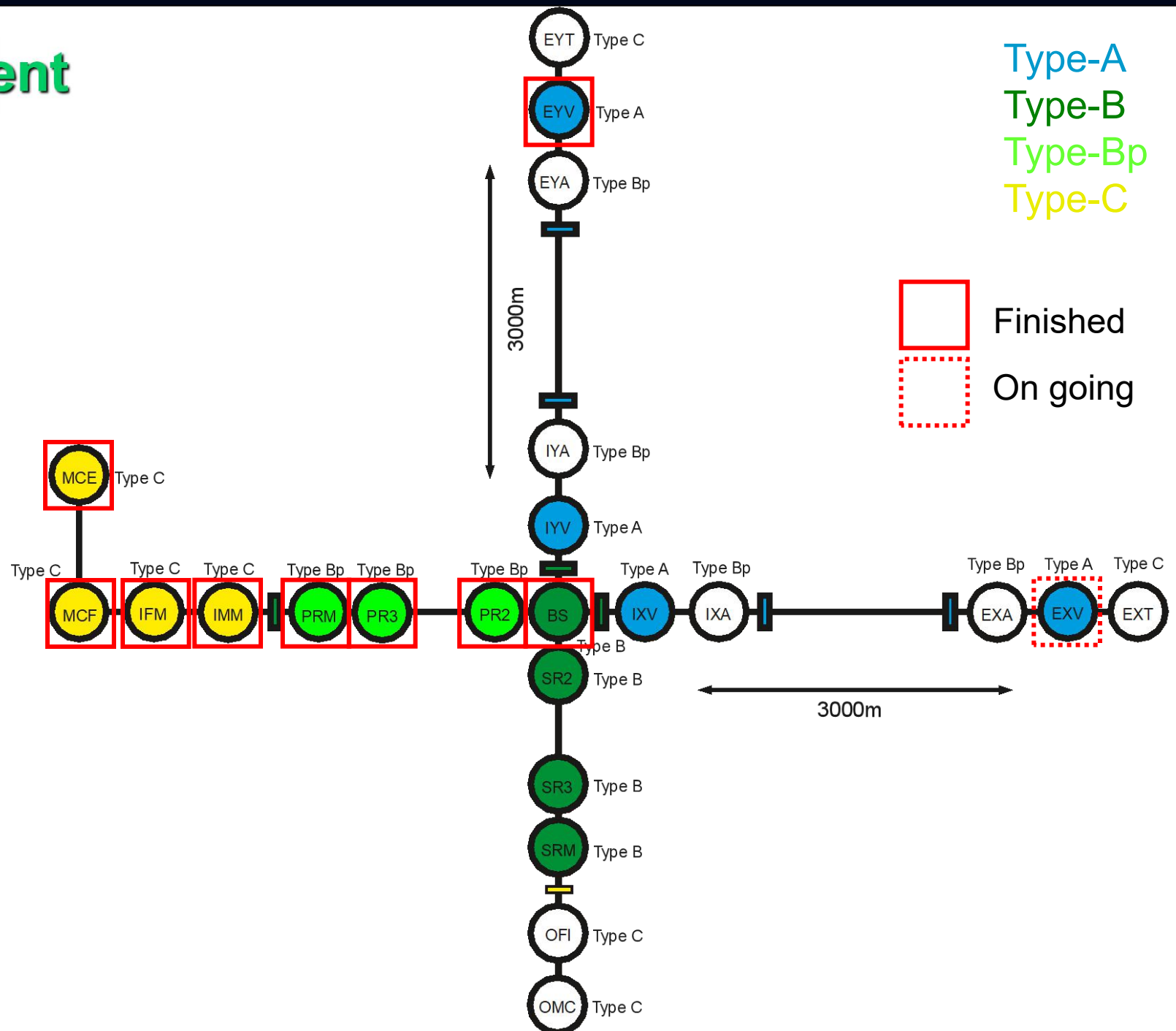
Intermediate Recoil Mass (IRM)

Test Mass (TM)

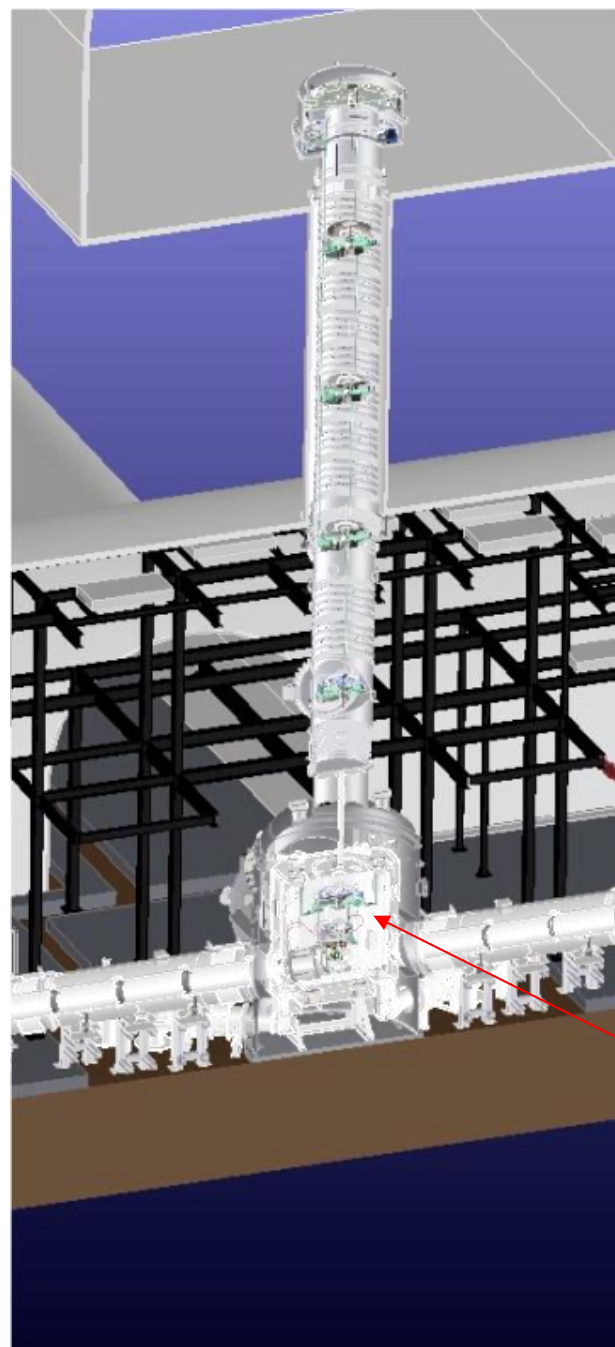
Recoil Mass (RM)



Arrangement



Installation of Type-A



2nd Floor

Bore Hole

1st Floor

Cryo-payload

Pre-isolator

Filter1

Filter2

Filter3

Bottom Filter
Dummy Payload



10m

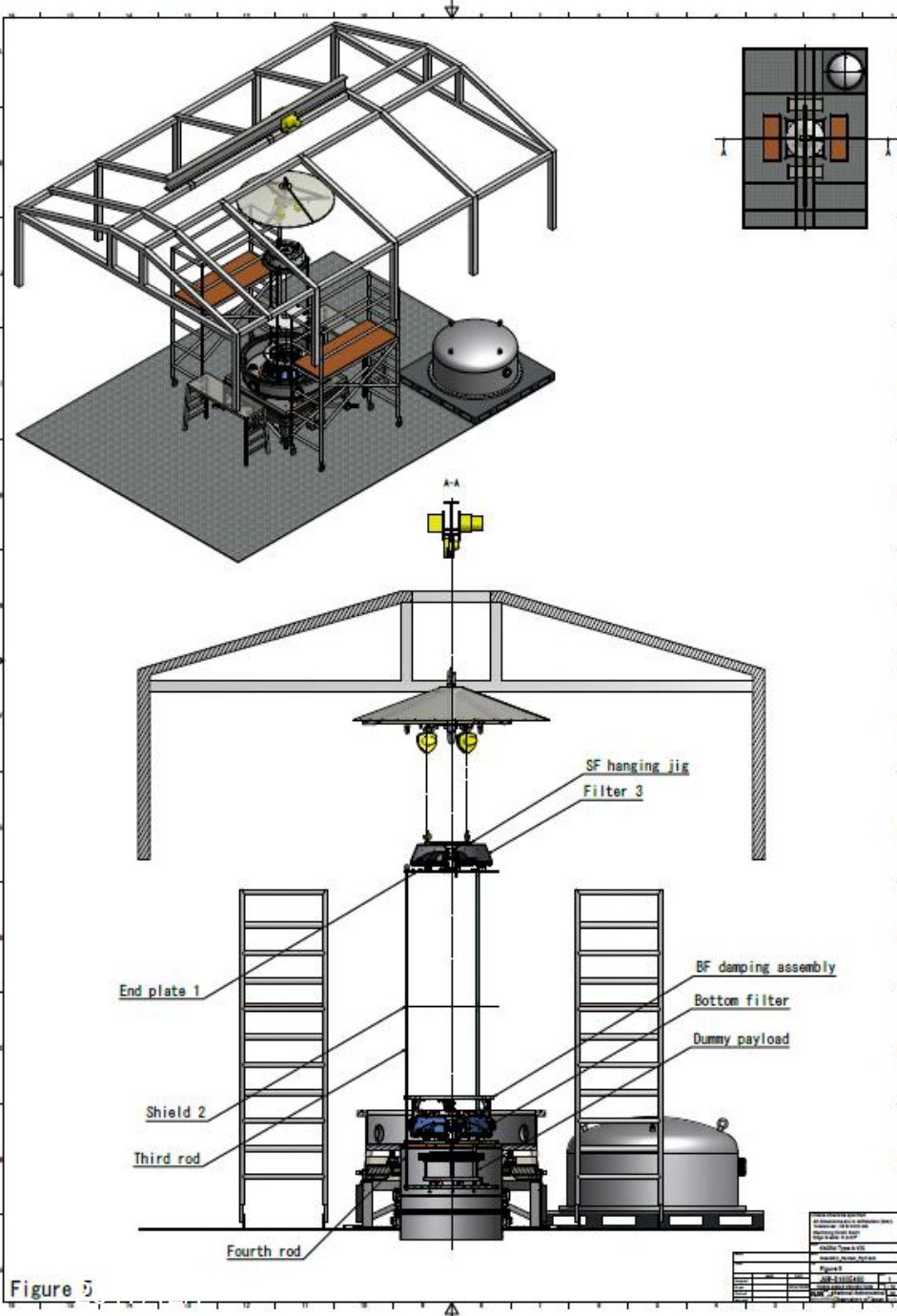


Figure 5

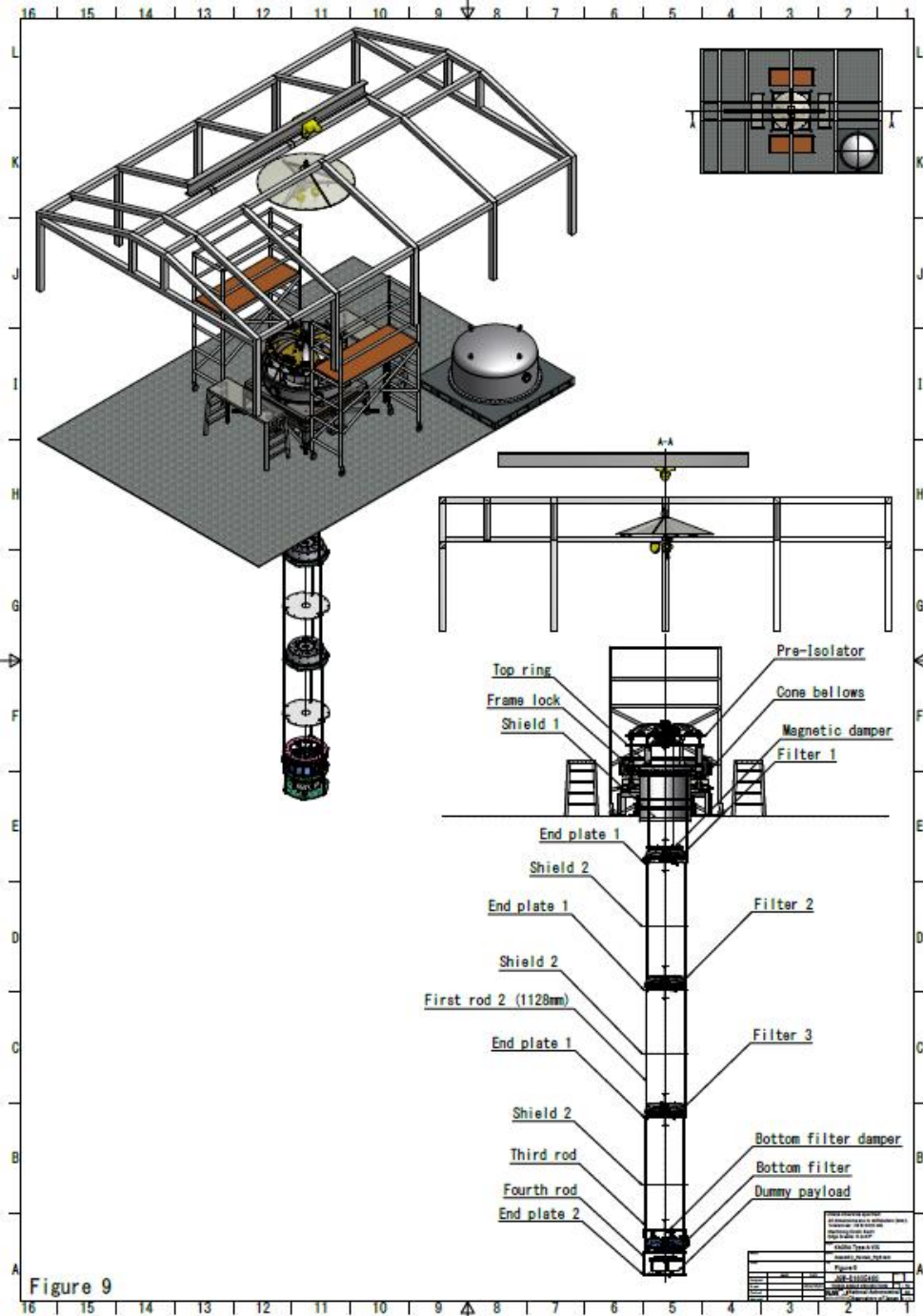
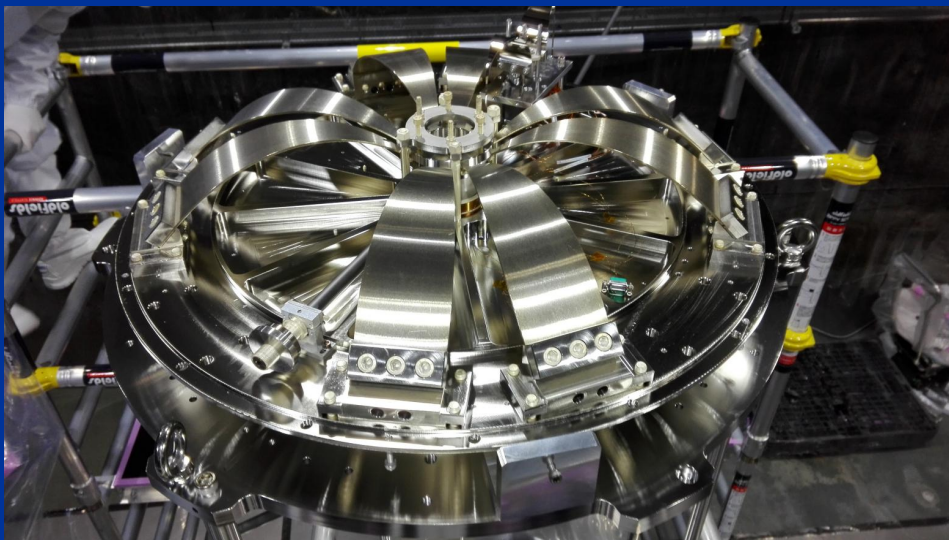


Figure 9



Setting of the bottom filter and the BF damper.



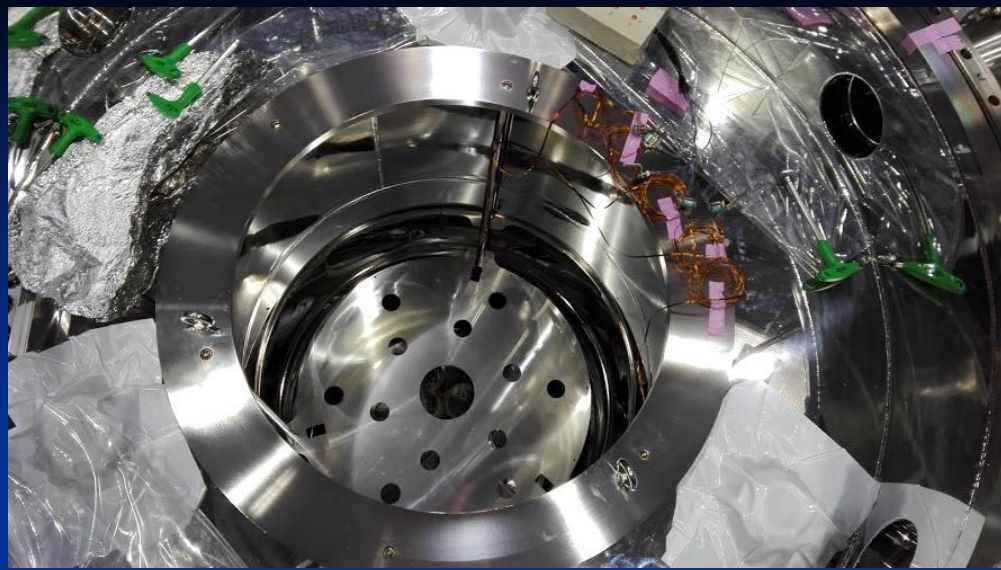
Filter3 mounted on the earthquake stop.



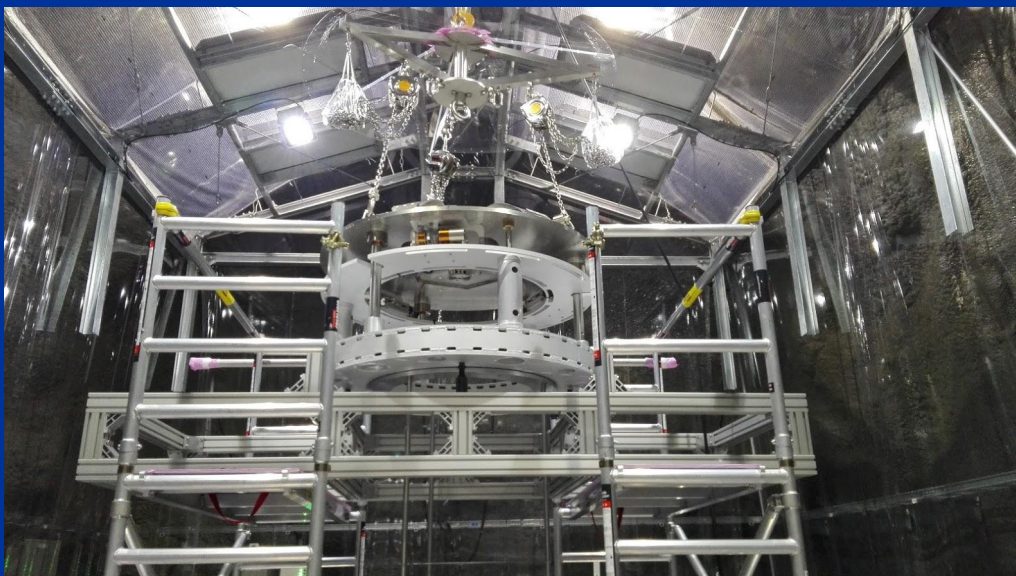
Cabling between the BF and the F3.



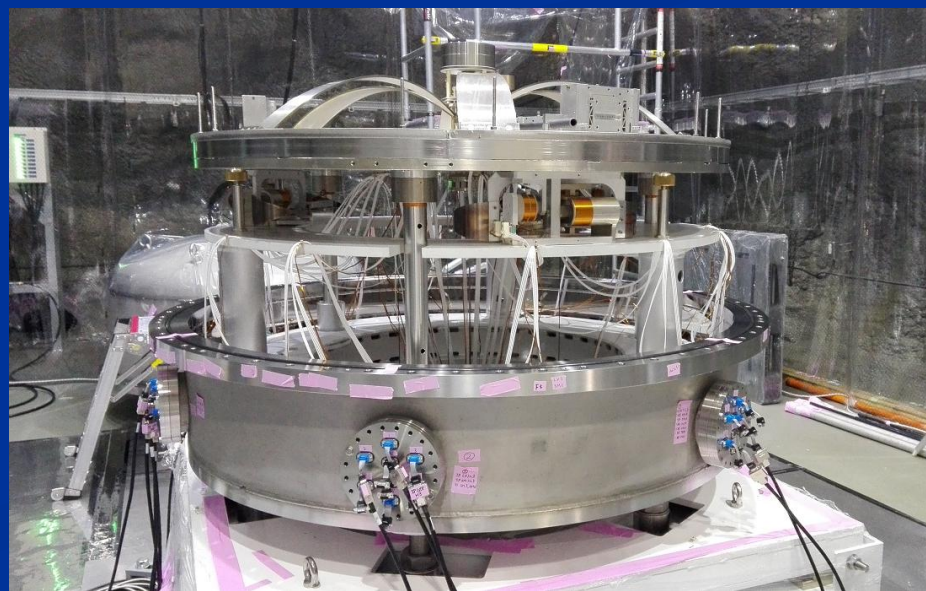
Filter1 with cables on the frame lock



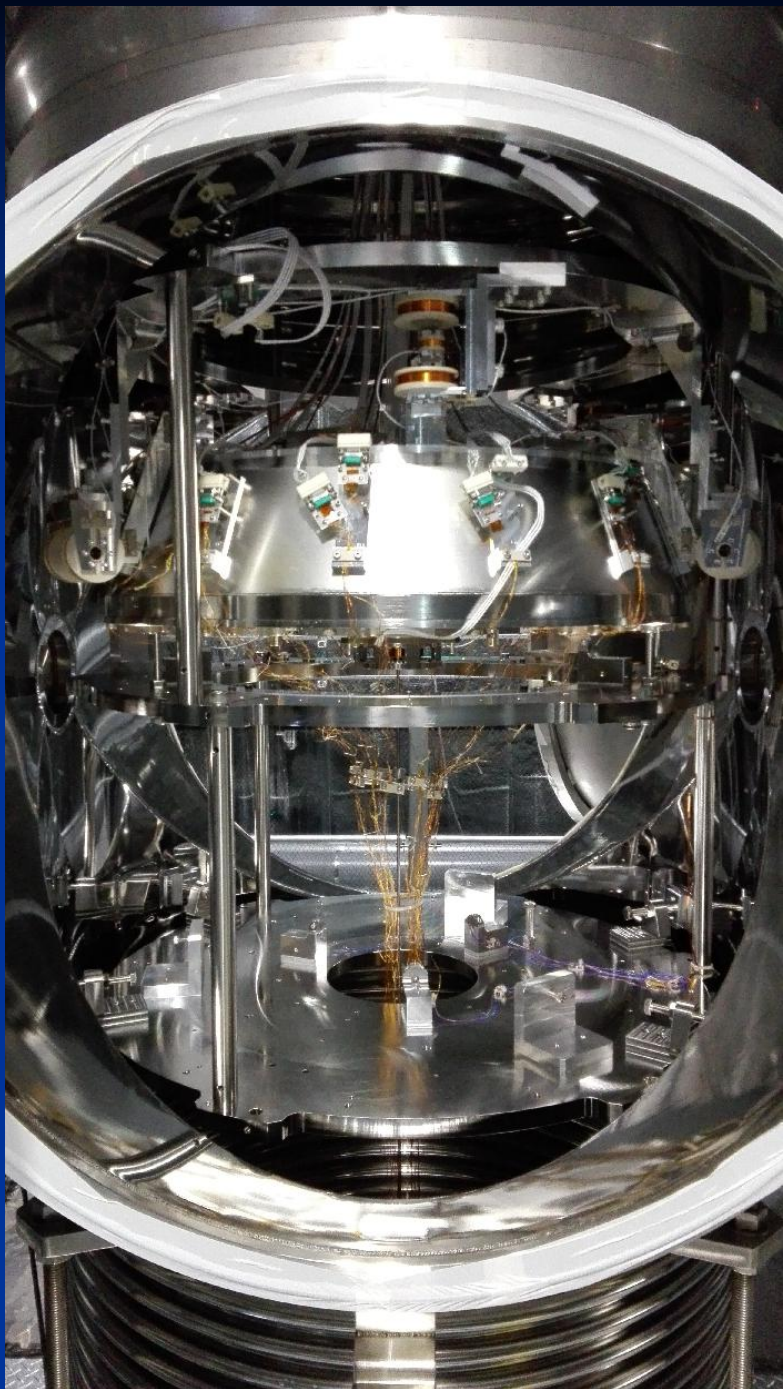
Top plate on the frame lock



Pre-isolator on the bridge frame



Pre-isolator in the chamber



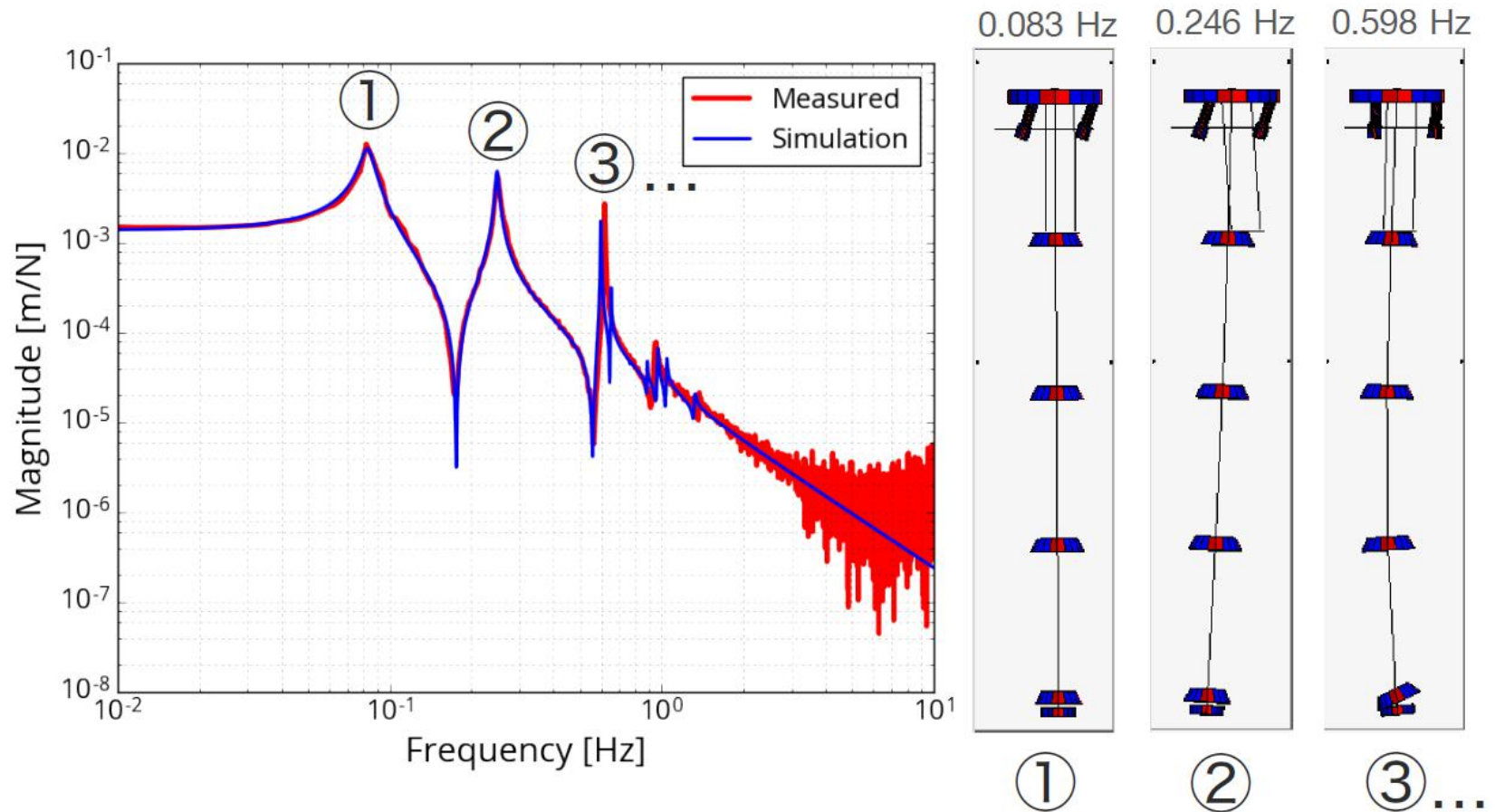
Accelerometers on the top filter



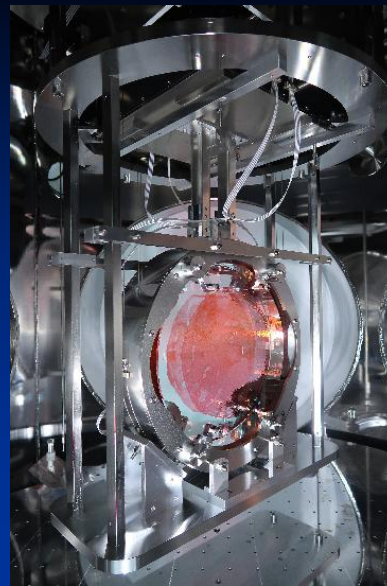
Seismometer on the dummy payload

Bottom filter in the cross tube

Measurement of transfer functions in Type-A



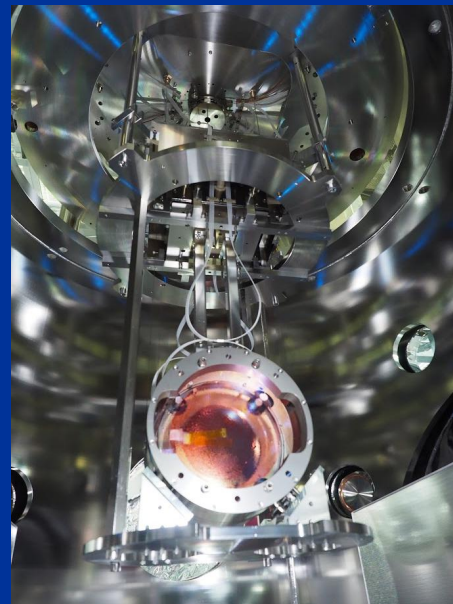
Installation of Type-B & Type-Bp



Beam splitter
(37cm)



(Top part)



(Bottom part)



Installation of Type-B (BS)

Installed Type-Bp (PRM)

Storage & Pre-assembly in Akeno

Shipping to Kamioka on 28th Aug.

- 3 Earthquake stops

Shipping to Kamioka on 13th Nov.

- 6 Standard filters
- 2 Top filters
- 3 Inverted pendulums

