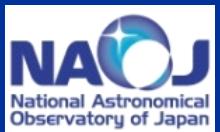


Discussion on bKAGRA VIS (Type-A)

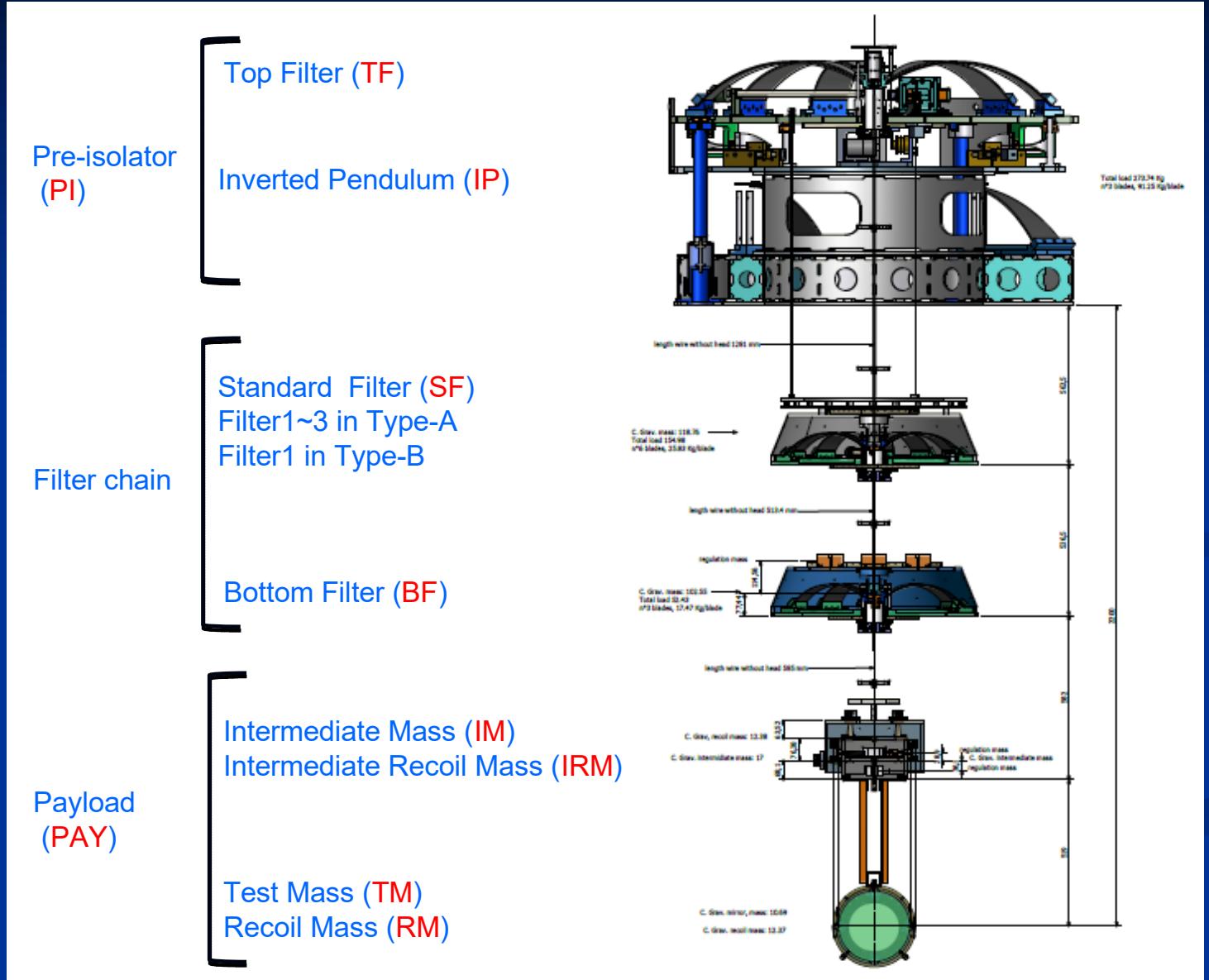
Ryutaro Takahashi
(National Astronomical Observatory of Japan)

The 13th face to face meeting
ICRR, 21-23 February, 2016



Seismic Attenuation System SAS

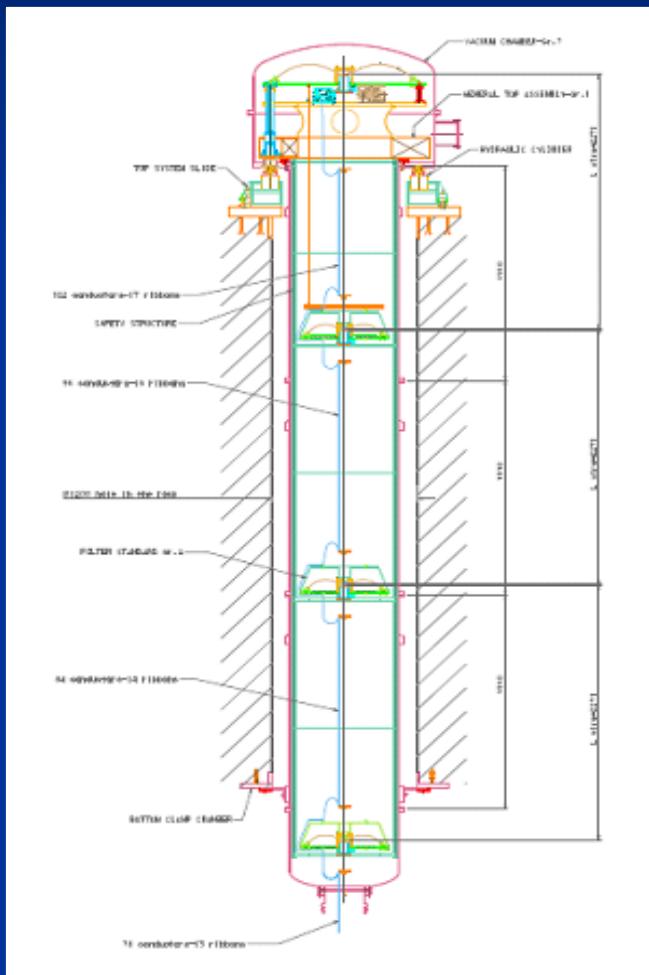
(Type-A/B)



Type-A

IXV
EXV
IYV
EYV

The pre-isolstor is placed in the upper tunnel. The borehole contains the filter chain.



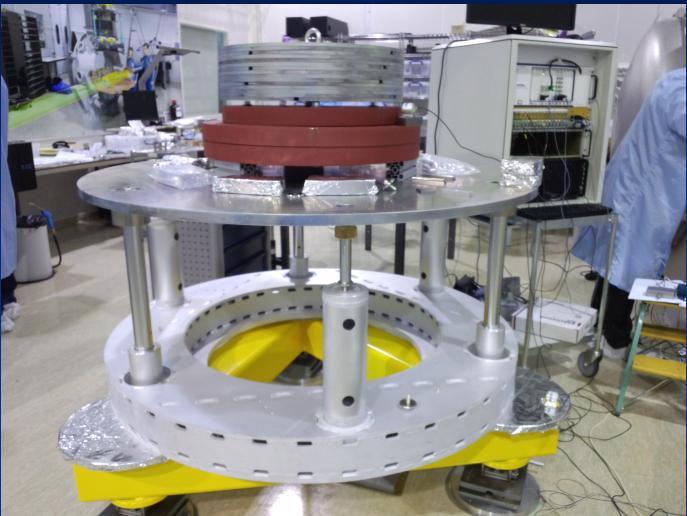
Preparation status

| | Top Filter | Inverted Pendulum | Standard Filter | Bottom Filter | EQ stop |
|----------------|---------------|----------------------|--------------------|------------------|---------|
| Need | 4 | 4 | 12 | 4 | 4 |
| Existing | 4 | 4 | 12 | 0 | 0 |
| To be built | 0 | 0 | 0 | 4* | 4** |

* The bottom filters will be assembled in ATC.

** The design should be fixed by the end of April.

Production of pre-isolators



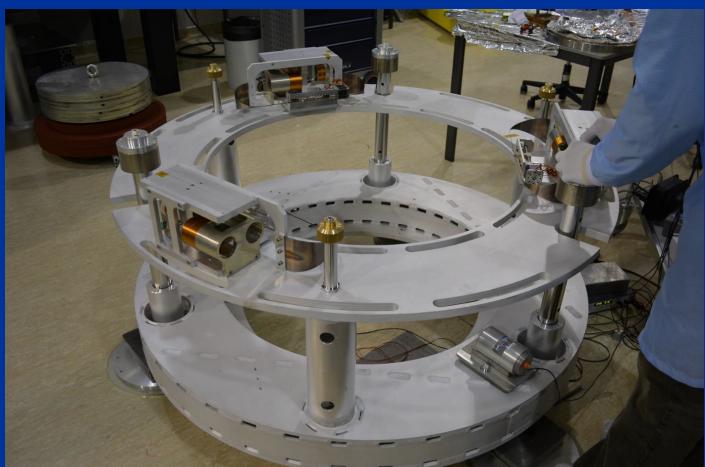
Tuning of the inverted pendulum
in NIKHEF



Tusing of the top filter

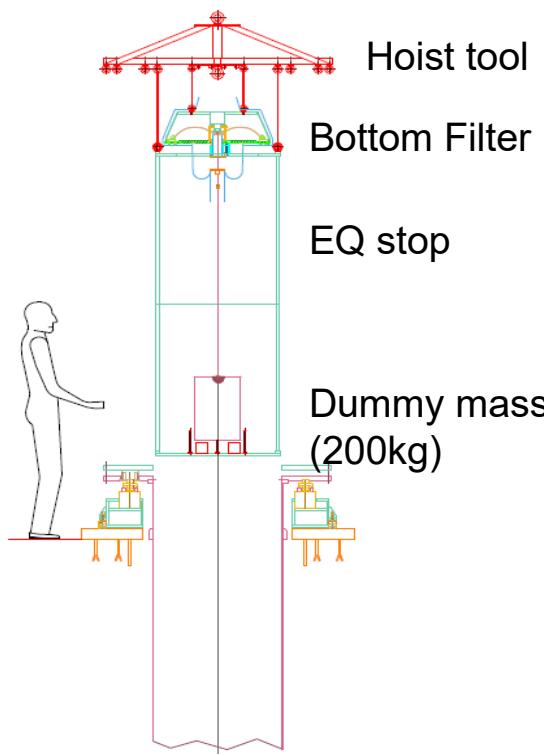


Bending of the GAS blade

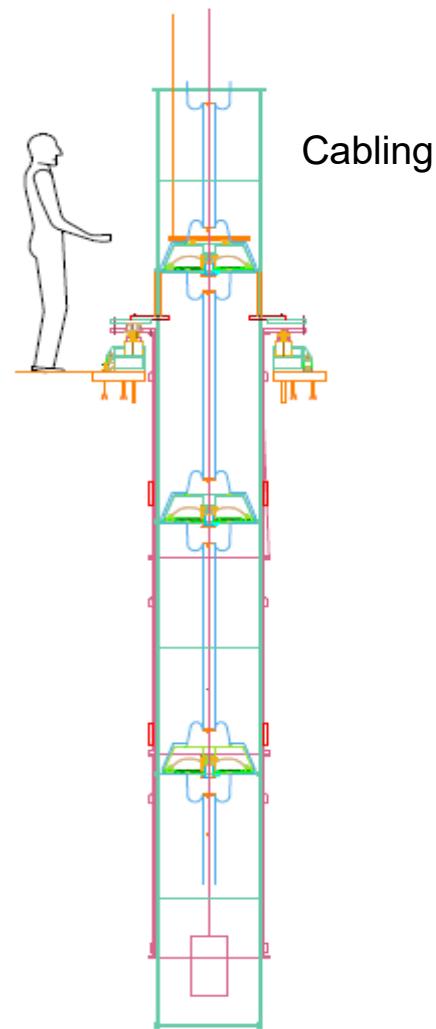


Mounting of the LVDT-actuator module in NIKHEF

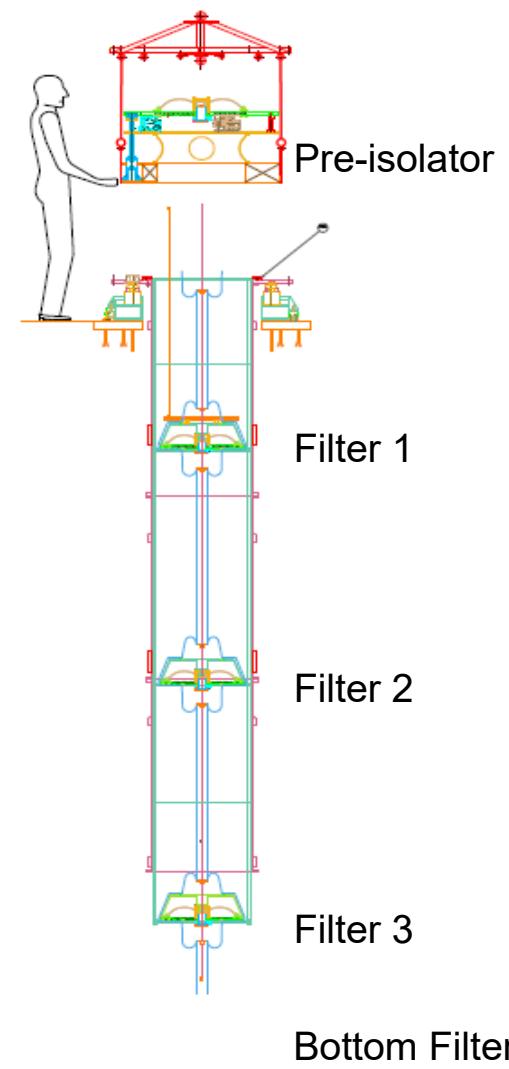
Installation of Type-A system



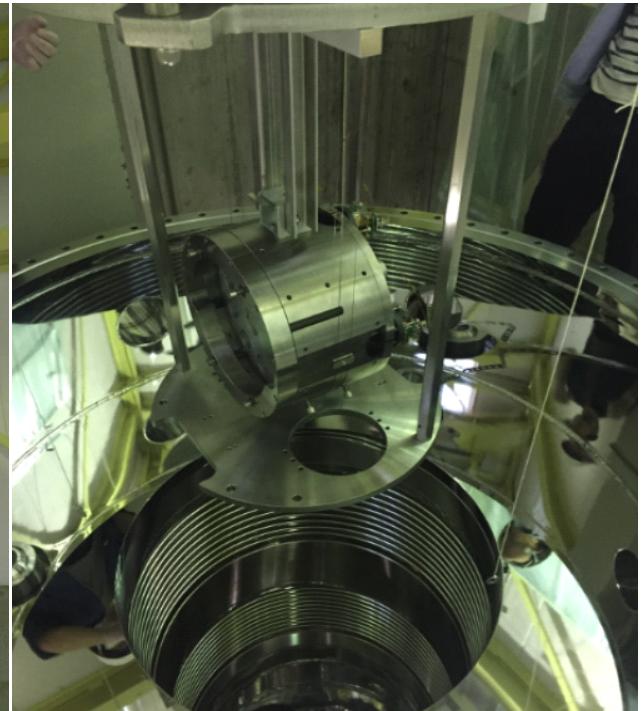
JGW-T1100410



Cabling



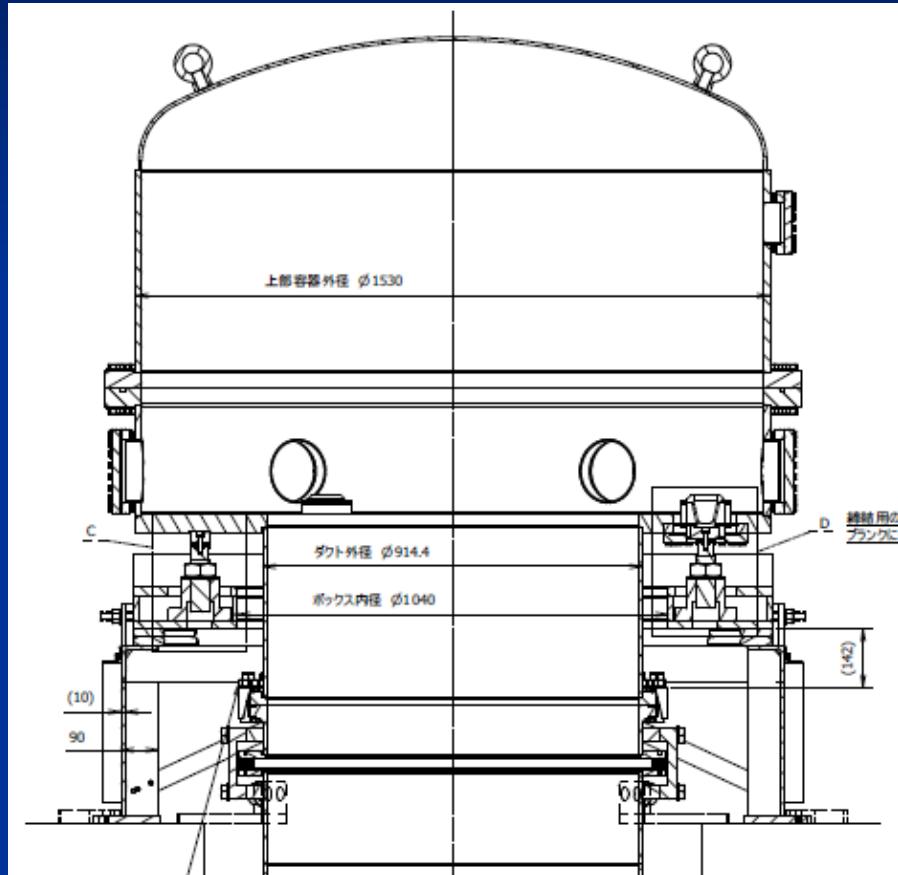
Bottom Filter



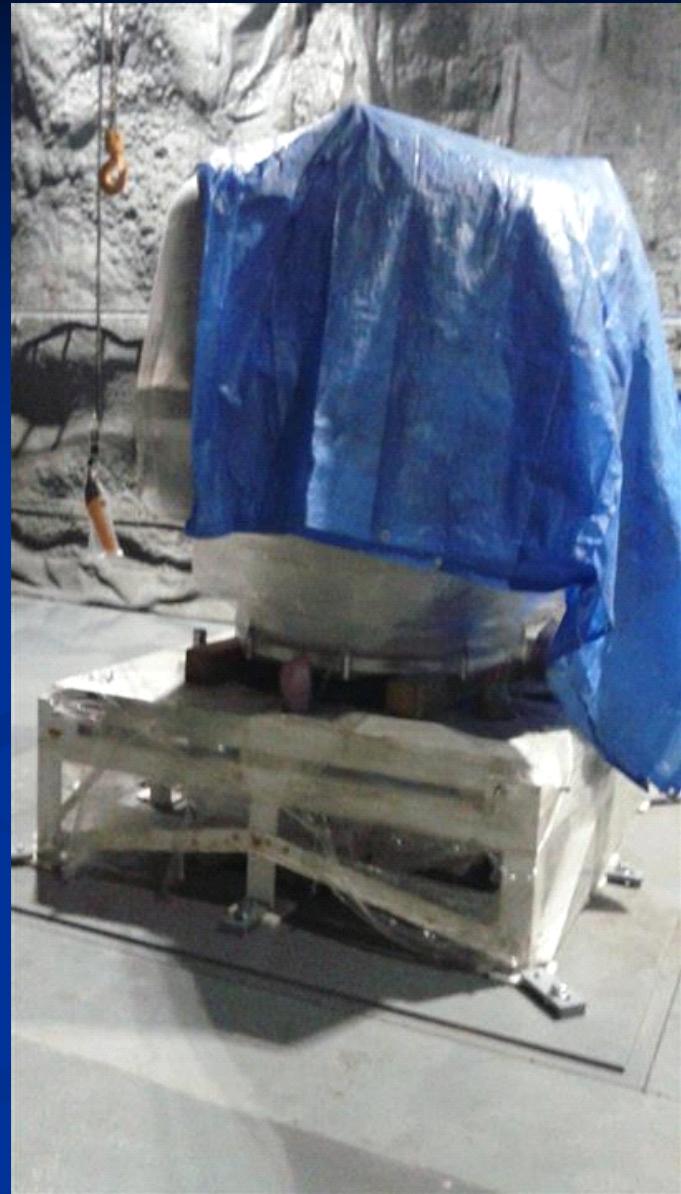
Prototype in TAMA

JGW-T1503578

Top chamber for pre-isolator

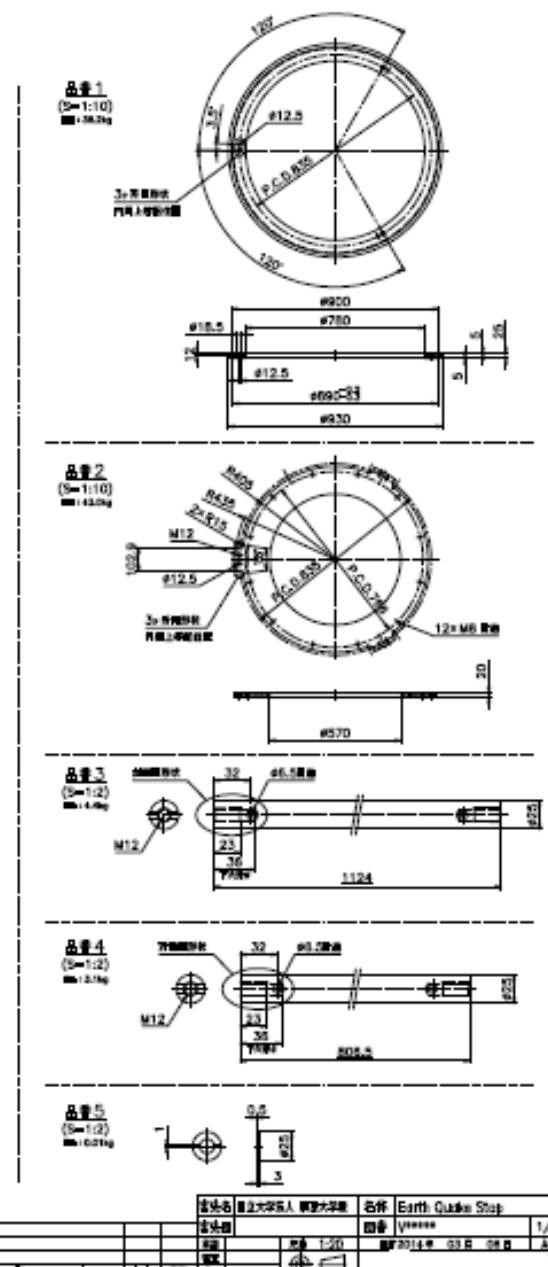
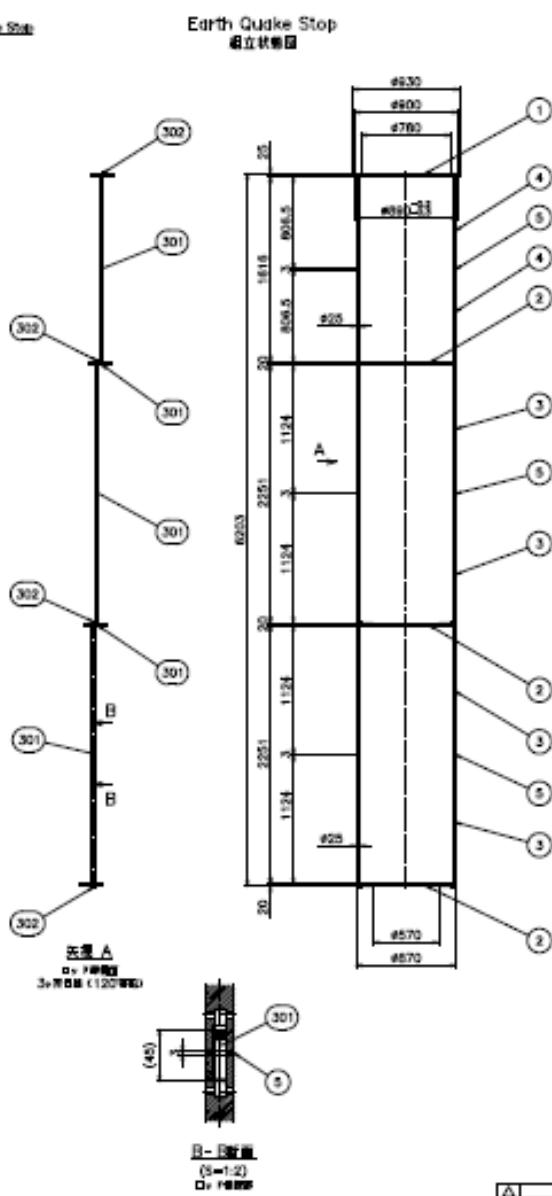
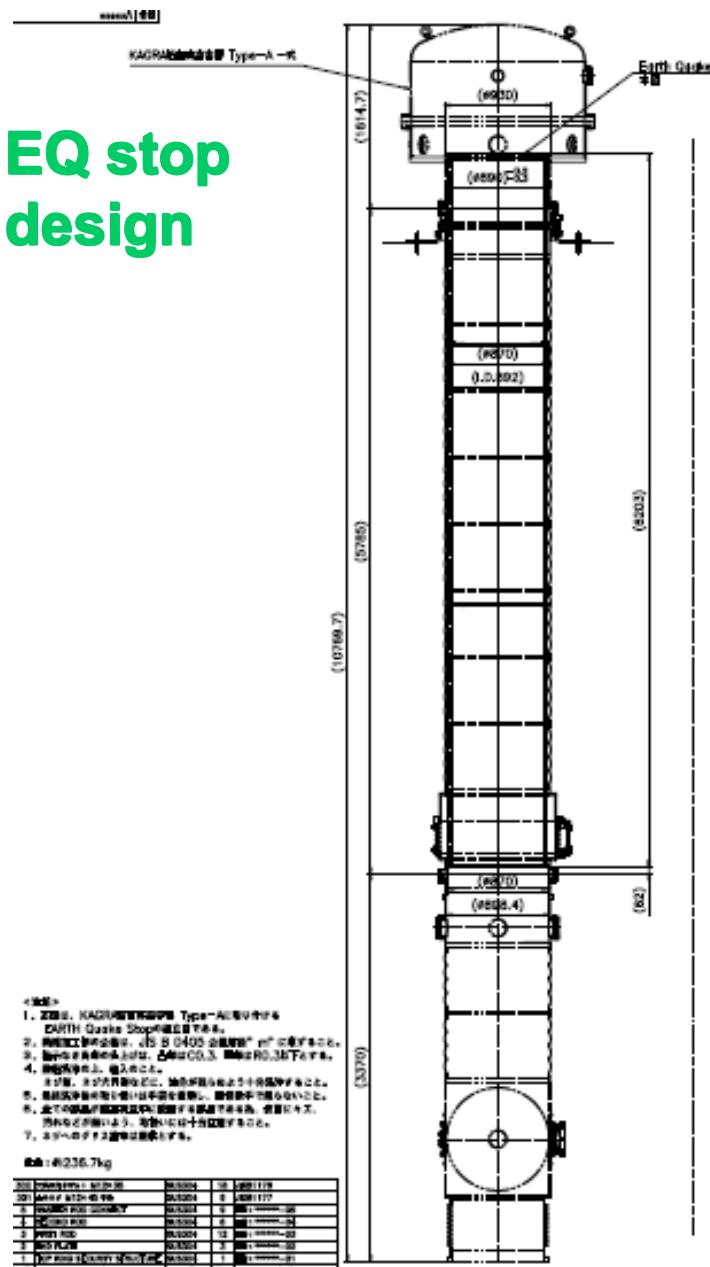


Structure of the IP base



Top chamber and IP base in IXV

EQ stop design



Task list

| ID | Item | Place | Personel | Schedule | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----|--|------------|------------------------|----------|---|---|---|---|---|---|---|----|
| 0- | Drawings | | | | | | | | | | | |
| | 1 Assy. | | Hirata, (KEK engineer) | | | | | | | | | |
| | 2 Simulation | | ??? | | ■ | | | | | | | |
| 1- | IP base (Box) | | | | | | | | | | | |
| | 1 Setting | Site | VAC | | | | ■ | ■ | | | | |
| 2- | Chamber | | | | | | | | | | | |
| | 1 Setting of top chamber | Site | VAC | | | | ■ | ■ | | | | |
| | 2 Procurement of cone bellows | | Takahashi | | | ■ | ■ | | | | | |
| | 3 Setting of connection chamber | Site | VAC | | | | | | ■ | ■ | | |
| 3- | Pre-isolator | | | | | | | | | | | |
| | 1 Transportation of IP and TF | from Akeno | Takahashi | | | | ■ | | | | | |
| | 2 Assembly of TF+IP | Site | Ishizaki | | | | | | ■ | ■ | | |
| | 3 Cable connection | Site | Ishizaki, Fujii | | | | | | | ■ | | |
| 4- | Standard Filter | | | | | | | | | | | |
| | 1 Transportation | from Akeno | Takahashi | | ■ | | | | | | | |
| | 2 Measurement of optimum load | ATC | Hirata, Saito | | | ■ | ■ | ■ | | | | |
| | 3 Assembly of FR | ATC | Hirata, Saito | | | ■ | ■ | ■ | | | | |
| | 4 Transportation | from NAOJ | Takahashi | | | ■ | | | | ■ | | |
| | 5 Procurement of damper magnet | | Takahashi | | | | | | | | | |
| 5- | Bottom Filter | | | | | | | | | | | |
| | 1 Blade design | | | | ■ | | | | | | | |
| | 2 Assembly | ATC | Hirata, Saito | | | ■ | ■ | ■ | | | | |
| | 3 Assembly of FR | ATC | Hirata, Saito | | | ■ | ■ | ■ | | | | |
| | 4 Measurement of optimum load | ATC | Hirata, Saito | | | ■ | ■ | ■ | | | | |
| | 5 Transportation | from NAOJ | Takahashi | | | | | | ■ | | | |
| 6- | EQ stop | | | | | | | | | | | |
| | 1 Design | | Takahashi, Hirata | | ■ | ■ | | | | | | |
| | 2 Procurement | | Takahashi | | | ■ | ■ | ■ | | | | |
| 7- | Long Maraging rod | | | | | | | | | | | |
| | 1 Test of prototype | | | | ■ | | | | | | | |
| | 2 Procurement | | Takahashi | | | ■ | ■ | ■ | | | | |
| 8- | Installation | | | | | | | | | | | |
| | 1 Establishment of procedure | | Takahashi | | ■ | ■ | | | | | | |
| | 2 Procurement of dummy weight | | Takahashi | | | | | | ■ | | | |
| | 3 Transportation of PI, SF, BF, EQS to 2F | | | | | | | | | ■ | | |