Problems raised from lessons learned from iKAGRA installation

Mechanics

Is that all OK?

- RM pitch resonant frequency is still low, which does not match well to the simulation. Should we do other way to improve this, i.e., modification of RM?

	Simulation	Measured	
TAMA prototype: w/600um W wire	5 Hz	4.1 Hz	Almost no difference
iKAGRA PR3: w/650um W wire	5.5 Hz	4.2 Hz	

Installation procedure

- We skipped many steps Because we do not care for iKAGRA

We did not measure Q value.
We did not check the violin mode.
We did not adjust the IM suspension position much.

We should measure in bKAGRA.
Can we measure it outside the vacuum?
(I think it is difficult because of the wind.)

Can we test when we pull out the iKAGRA PR3?

What else?

Requirement for resonant frequencies and the position of the IM?
(Simulation required?)

We did not. But I heard that Mark is the expert.
We should prepare for it.
(measurement devices, and so on…)

- During the bKAGRA, can we step into the vacuum chamber?

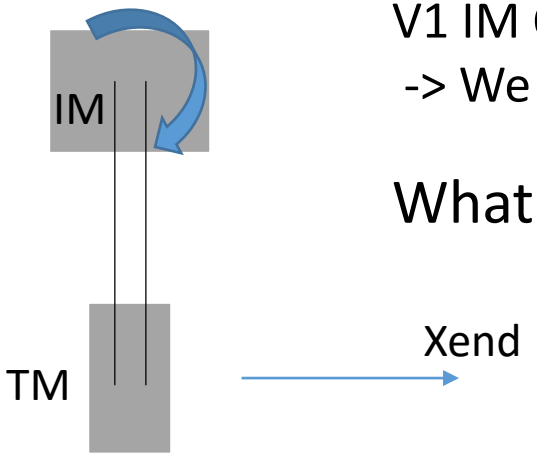
Since the optical bench will be suspended.

If so, we cannot fully check and adjust the status of the IM and others after the installation into the chamber.
We should change something.
Or, do not suspend the optical bench till the very end. Is it possible??

After the installation

- Alignment

We actuated the IM in pitch a lot during the initial alignment.



V1 IM OSEM went out of the linear range.
-> We had to adjust the OSEM again inside the chamber.

What was wrong???

According to the main laser beam, the height of the PR3 was OK???