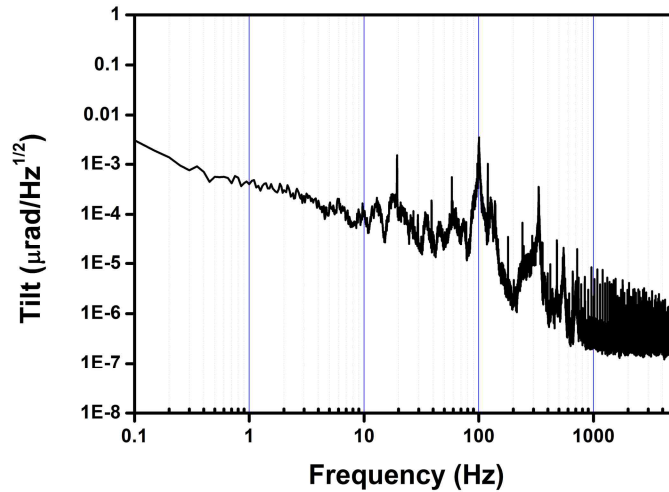
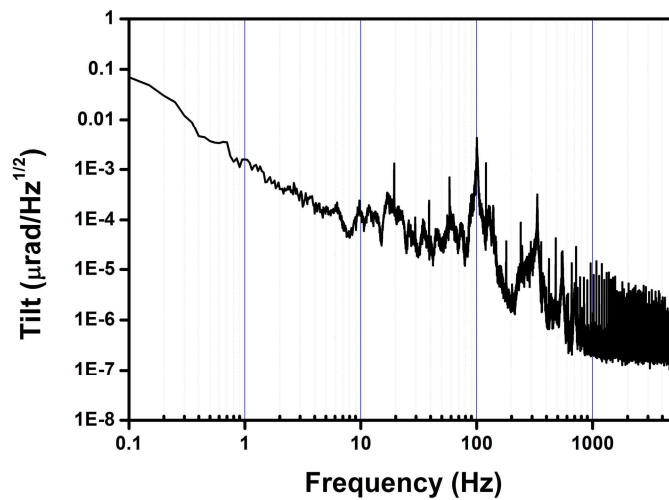


# Test result of tilt sensor

I tested tilt sensor only for yaw direction. Experimental configuration is almost same with last configuration that I did at KAGRA. Distance between target and mirror is 1.2m. I put the source, detector and target mirror on same optical. Table that's important difference with last configuration.



**Figure 1. Stability measurement result of tilt sensor (Yaw): all optical path is shielded with long PVC pipe.**



**Figure 2. Stability measurement result of tilt sensor without shield.**

Fig. 1. and Fig. 2. is FFT result of tilt sensor signal. Two results are show us there is low frequency noise source from air turbulence. There is 1 order difference for each case at 0.1 Hz. Some noise peak below 100Hz are coming from air conditioner(18Hz and its harmonics) but I cannot find the noise source of 50Hz and 100Hz. Fig. 3. is long term stability measurement result. Actually unit of temperature value is K(Kelvin). And we did some calibration to temperature measurement. But still we cannot believe that temperature. Because it is too stable. So we just remained that temperature unit as a.u. . Small periodic tilt fluctuation is related with sinusoidal temperature fluctuation but we cannot find correlation between temperature and tendency of slow drift.

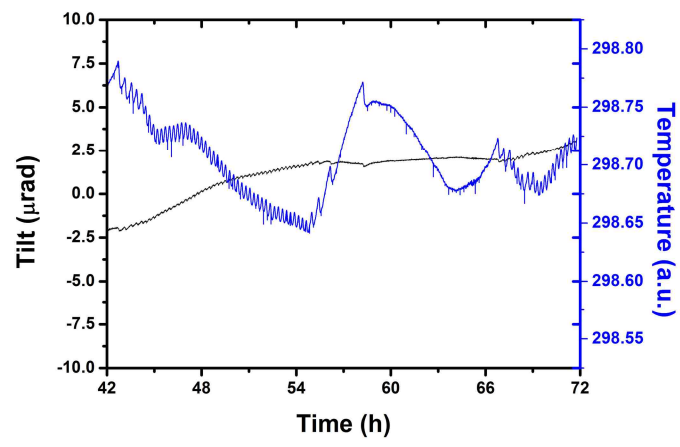


Figure 3. Long term stability measurement result.