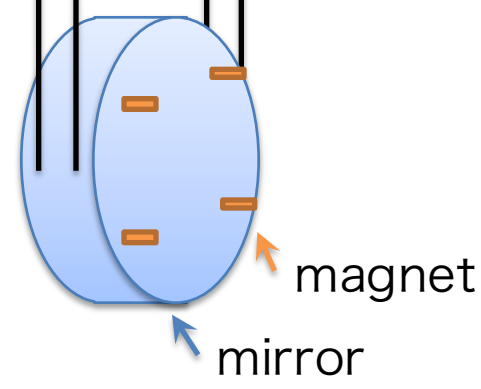
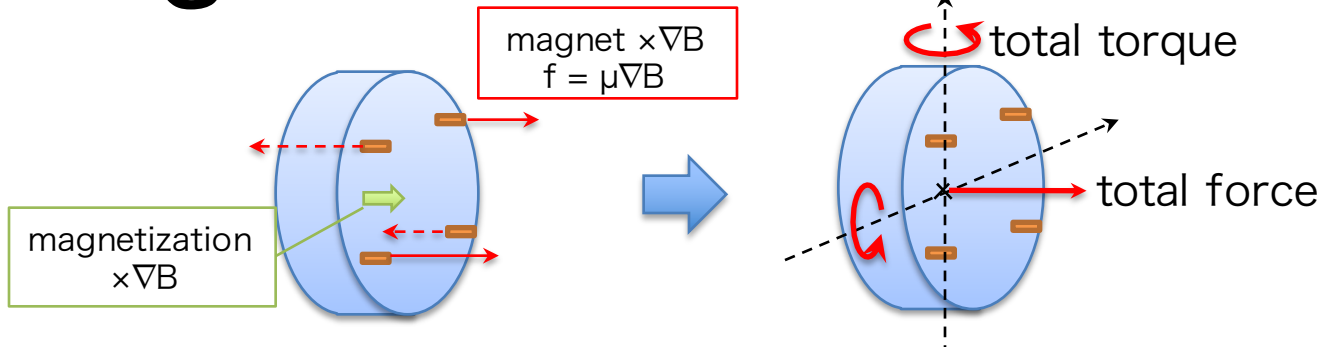
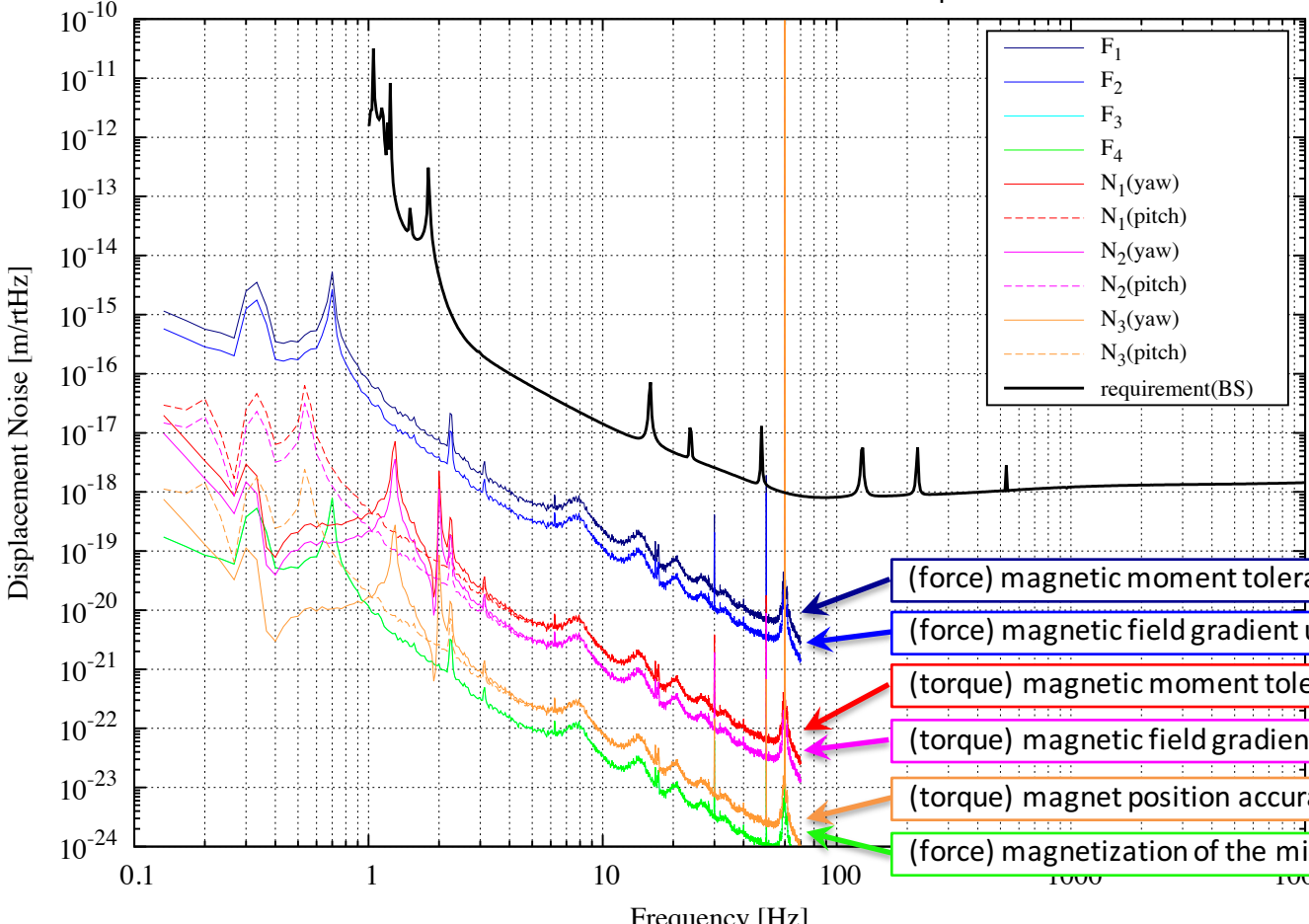


Magnetic noise for BS

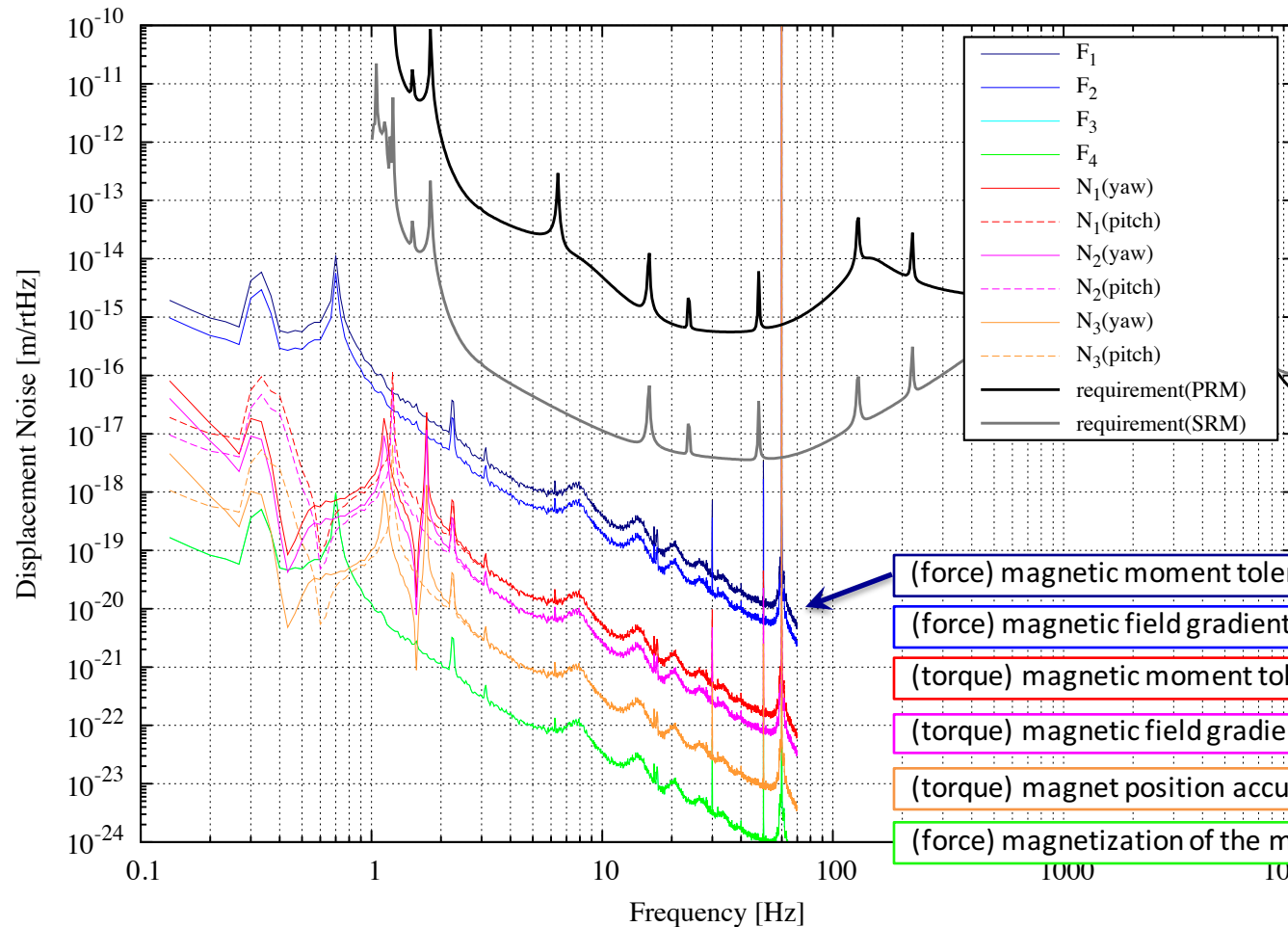


parameter	value
mirror mass M [kg]	18.9
magnetic moment of magnets : μ [A·m ²]	0.074
magnetic field B [T]	4.7×10^{-5}
fluctuation of B \tilde{B} [T/rtHz]	5×10^{-13} @10Hz
magnetic field gradient ∇B [T/m]	4.7×10^{-5}
fluctuation of ∇B $\tilde{\nabla B}$ [T/m/rtHz]	5×10^{-13} @10Hz



- (force) magnetic moment tolerance $\delta\mu \sim 0.2\mu$
- (force) magnetic field gradient nonuniformity $\delta(\nabla B) \sim 0.1(\nabla B)$
- (torque) magnetic moment tolerance $\delta\mu \sim 0.2\mu$
- (torque) magnetic field gradient nonuniformity $\delta(\nabla B) \sim 0.1(\nabla B)$
- (torque) magnet position accuracy $\delta x \sim 1[\text{mm}]$
- (force) magnetization of the mirror

Magnetic noise for PRM/SRM



parameter	value
mirror mass M [kg]	10.8
magnetic moment of magnets : μ [$A \cdot m^2$]	0.074
magnetic field B [T]	4.7×10^{-5}
fluctuation of B \tilde{B} [T/rtHz]	5×10^{-13} @10Hz
magnetic field gradient ∇B [T/m]	4.7×10^{-5}
fluctuation of ∇B $\tilde{\nabla B}$ [T/m/rtHz]	5×10^{-13} @10Hz

(force) magnetic moment tolerance $\delta\mu \sim 0.2\mu$

(force) magnetic field gradient ununiformity $\delta(\nabla B) \sim 0.1(\nabla B)$

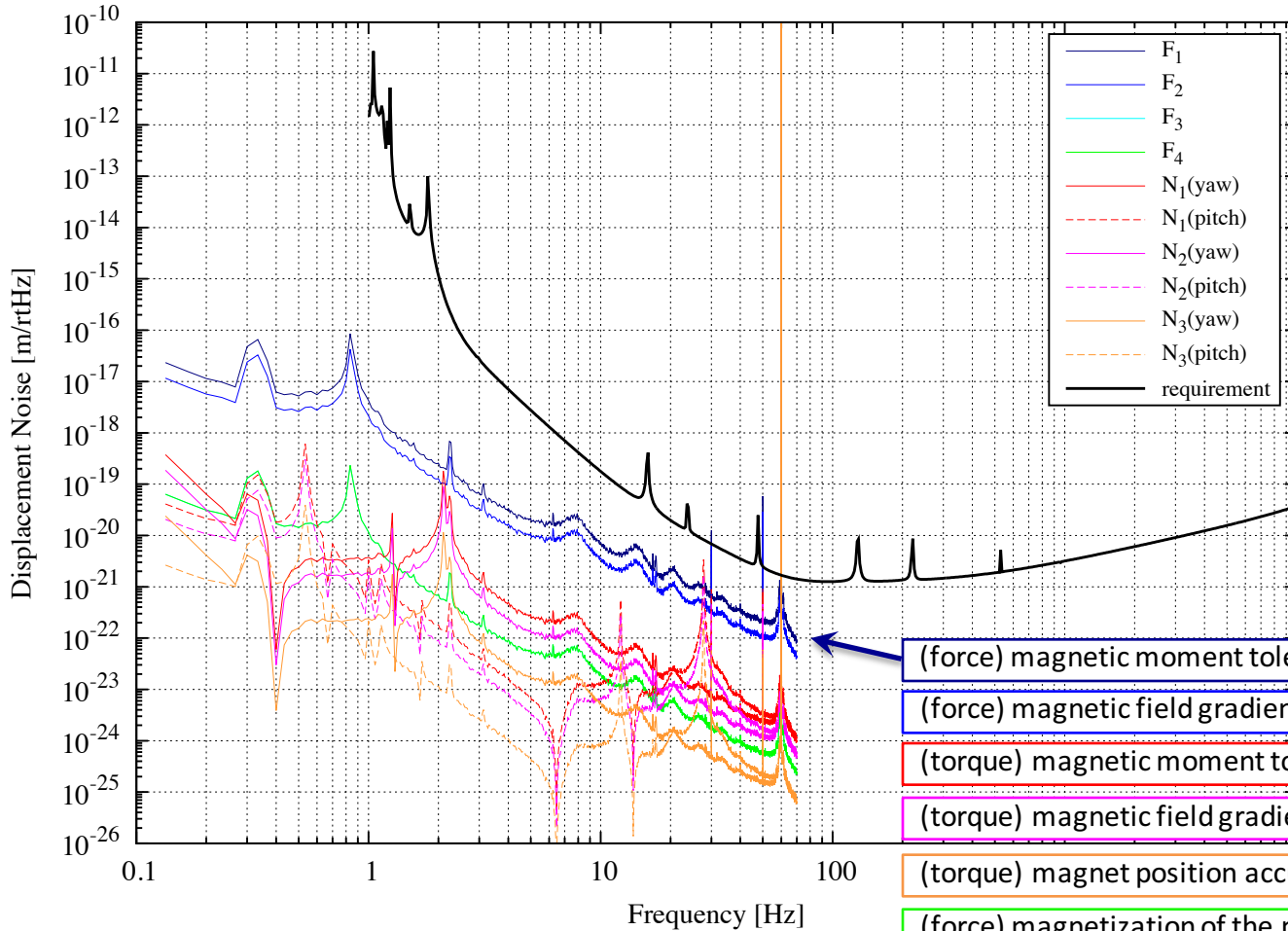
(torque) magnetic moment tolerance $\delta\mu \sim 0.2\mu$

(torque) magnetic field gradient ununiformity $\delta(\nabla B) \sim 0.1(\nabla B)$

(torque) magnet position accuracy $\delta x \sim 1[\text{mm}]$

(force) magnetization of the mirror

Magnetic noise for ITM/ETM



parameter	value
mirror mass M [kg]	22.7
magnetic moment of magnets : μ [A·m ²]	0.0027
magnetic field B [T]	4.7×10^{-5}
fluctuation of B \tilde{B} [T/rtHz]	5×10^{-13} @10Hz
magnetic field gradient ∇B [T/m]	4.7×10^{-5}
fluctuation of ∇B $\tilde{\nabla B}$ [T/m/rtHz]	5×10^{-13} @10Hz

(force) magnetic moment tolerance $\delta\mu \sim 0.2\mu$

(force) magnetic field gradient ununiformity $\delta(\nabla B) \sim 0.1(\nabla B)$

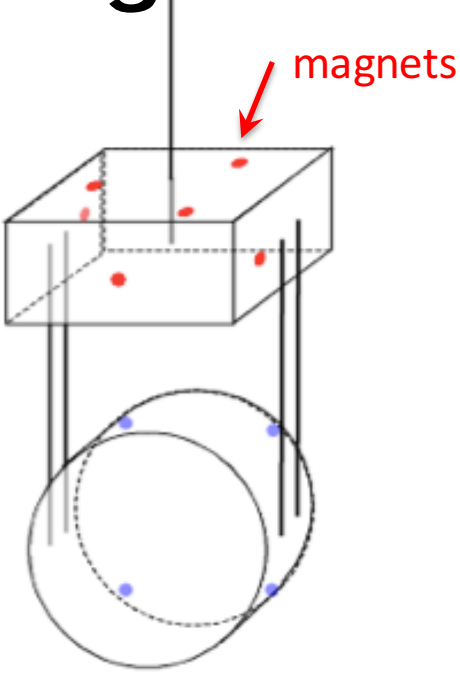
(torque) magnetic moment tolerance $\delta\mu \sim 0.2\mu$

(torque) magnetic field gradient ununiformity $\delta(\nabla B) \sim 0.1(\nabla B)$

(torque) magnet position accuracy $\delta x \sim 1[\text{mm}]$

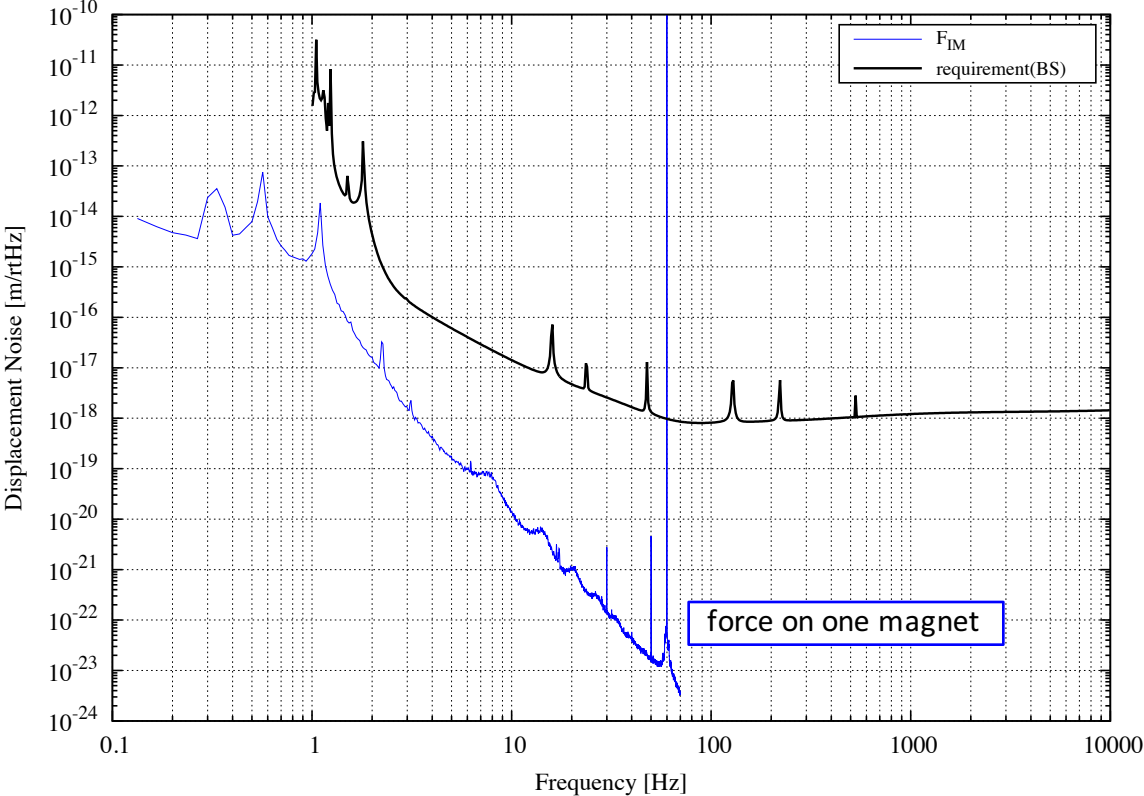
(force) magnetization of the mirror

Magnetic noise from IM (Intermediate Mass) magnets of BS suspension system

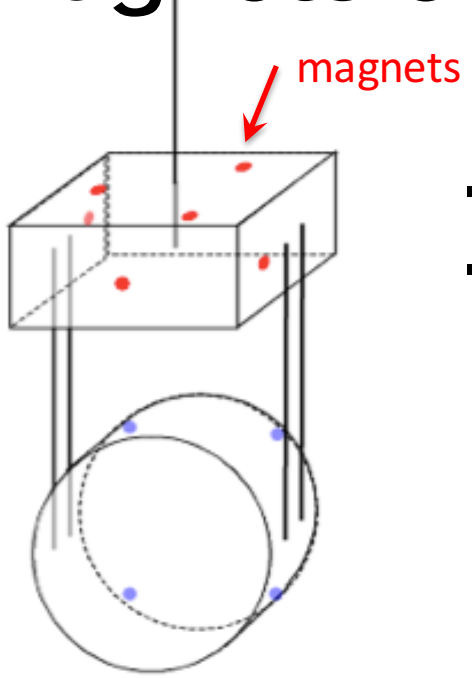


- NO cancellation between magnets
- larger magnets than the magnets on the mirror

parameter	value
IM mass M_{IM} [kg]	36.5
magnetic moment of magnets : μ [$A \cdot m^2$]	0.69
fluctuation of ∇B $\tilde{\nabla B}$ [T/m/rtHz]	5×10^{-13} @10Hz



Magnetic noise from IM_(Intermediate Mass) magnets of PRM/SRM suspension system



- NO cancellation between magnets
- larger magnets than the magnets on the mirror

parameter	value
IM mass M_{IM} [kg]	15.6
magnetic moment of magnets : μ [$A \cdot m^2$]	0.69
fluctuation of ∇B $\tilde{\nabla B}$ [T/m/rtHz]	5×10^{-13} @10Hz

