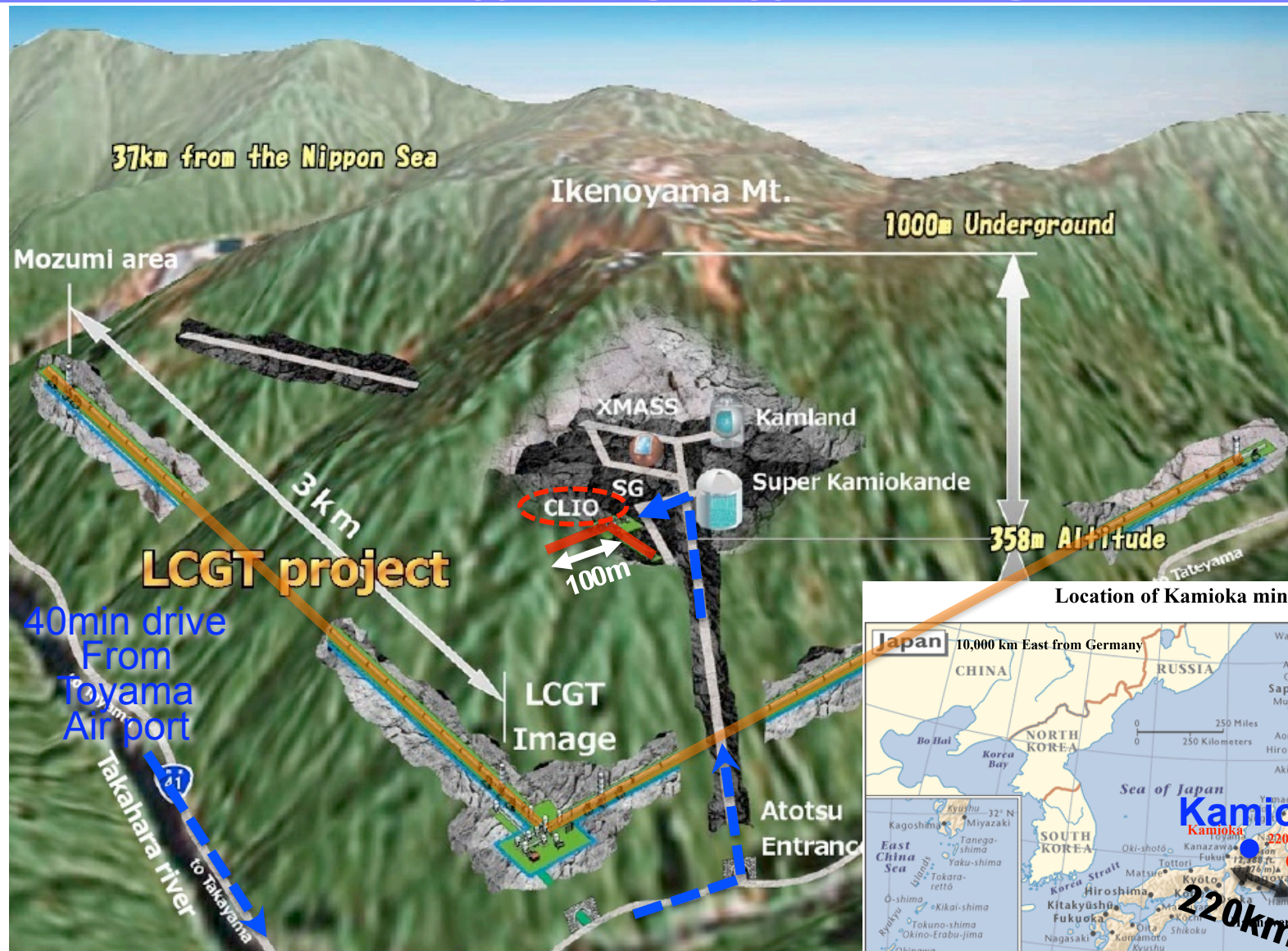


CLIO 100m prototype underground

- 100 meter scale, **cryogenic** interferometer
- **Underground** in Kamioka mine, very **quiet seismic** environment
- Locked-FP type (Caltech old 40meter Mark II style)
- 2W laser, 9.5m MC, Suspensions designed for cooling
- **Prototype for LCGT**, km scale project of Japan
- Reached to **suspension/mirror thermal noise** in room temperature
- Ready to **cool down** soon!

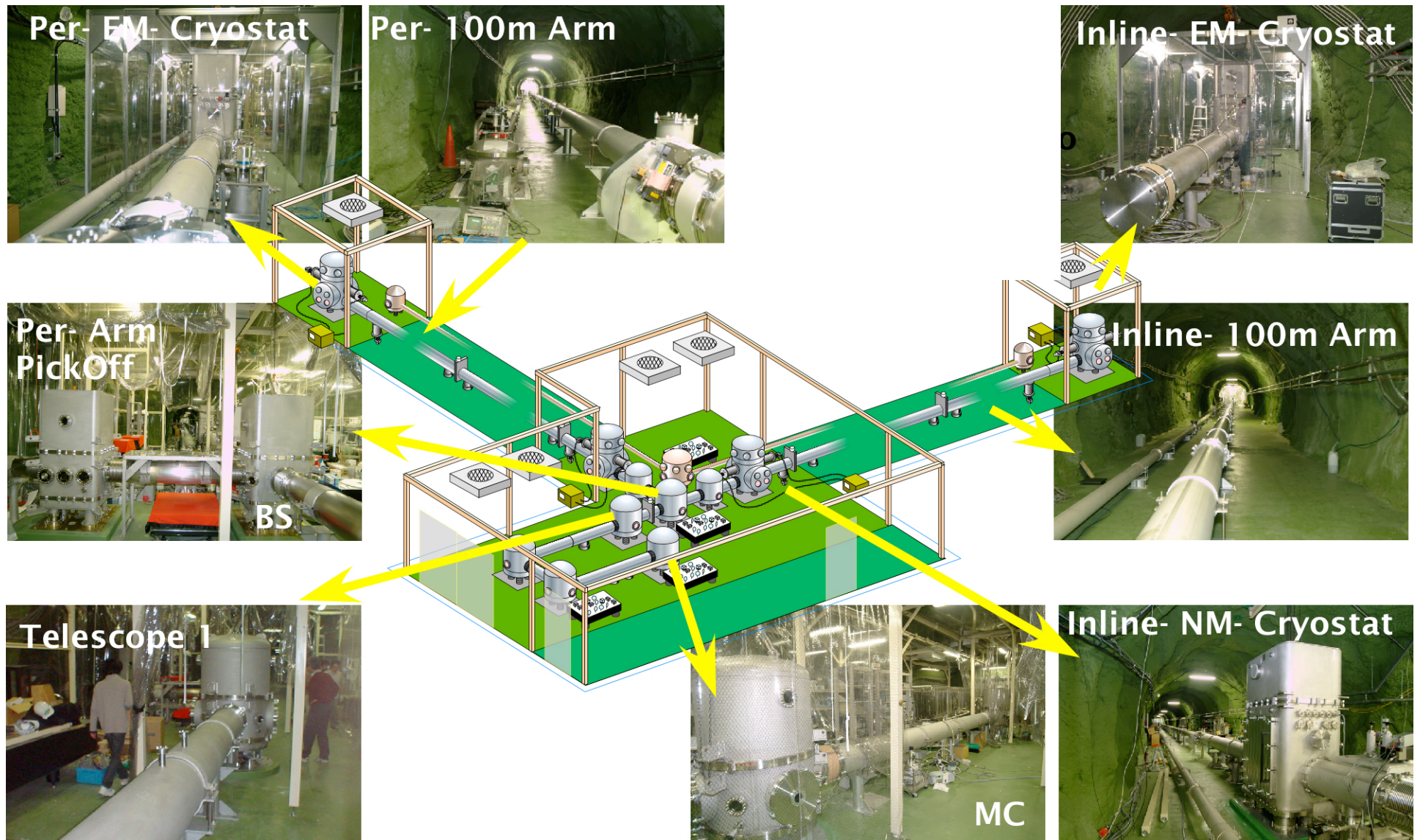
Laboratories underground, in Kamioka mine



L-V meeting at Arcadia, CA 3/17



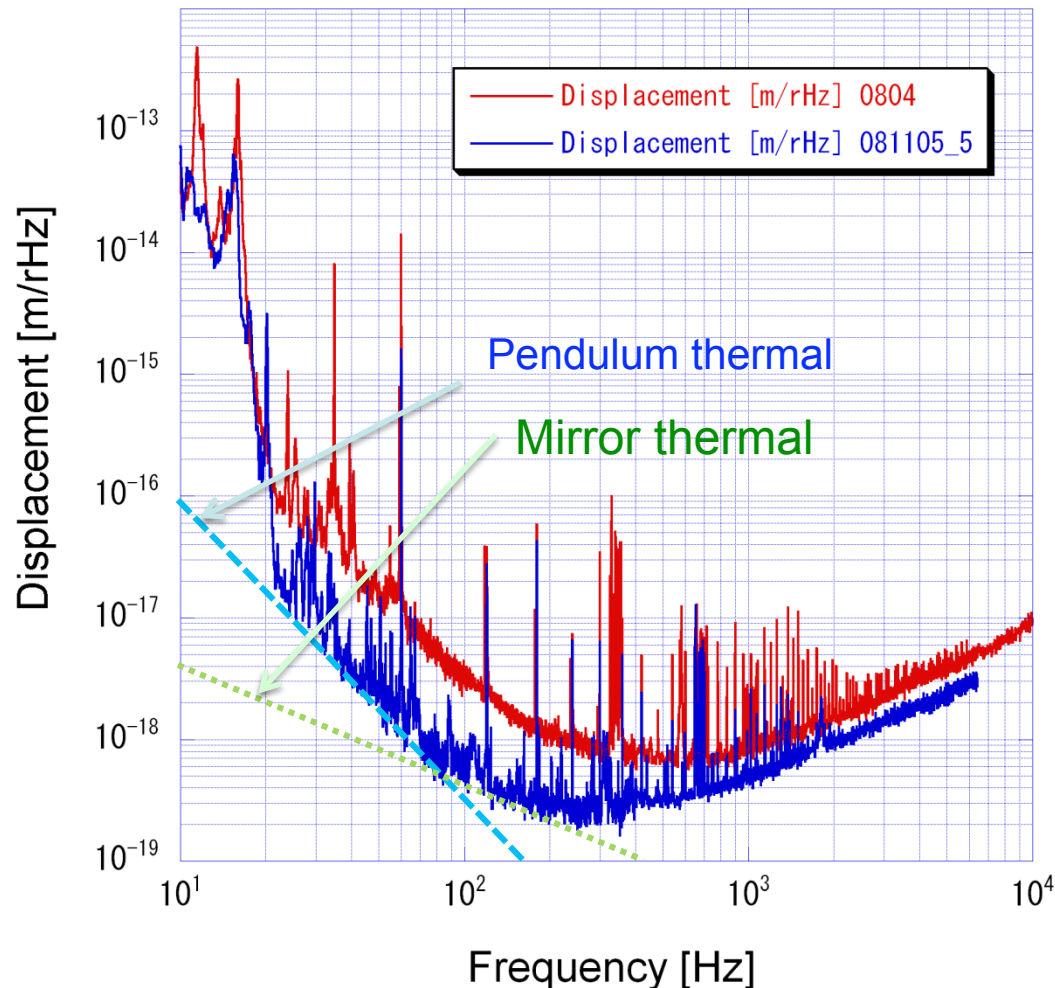
CLIO in Kamioka mine



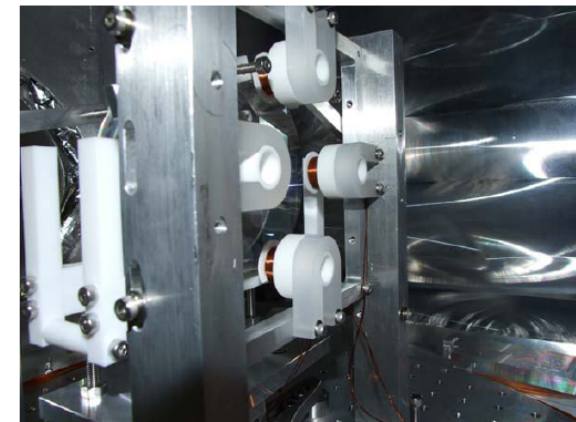
L-V meeting at Arcadia, CA 3/17/2009

CLIO reached to thermal noise in the room temperature

**CLIO Displacement Noise Improvement
from April/2008 to December/2008**

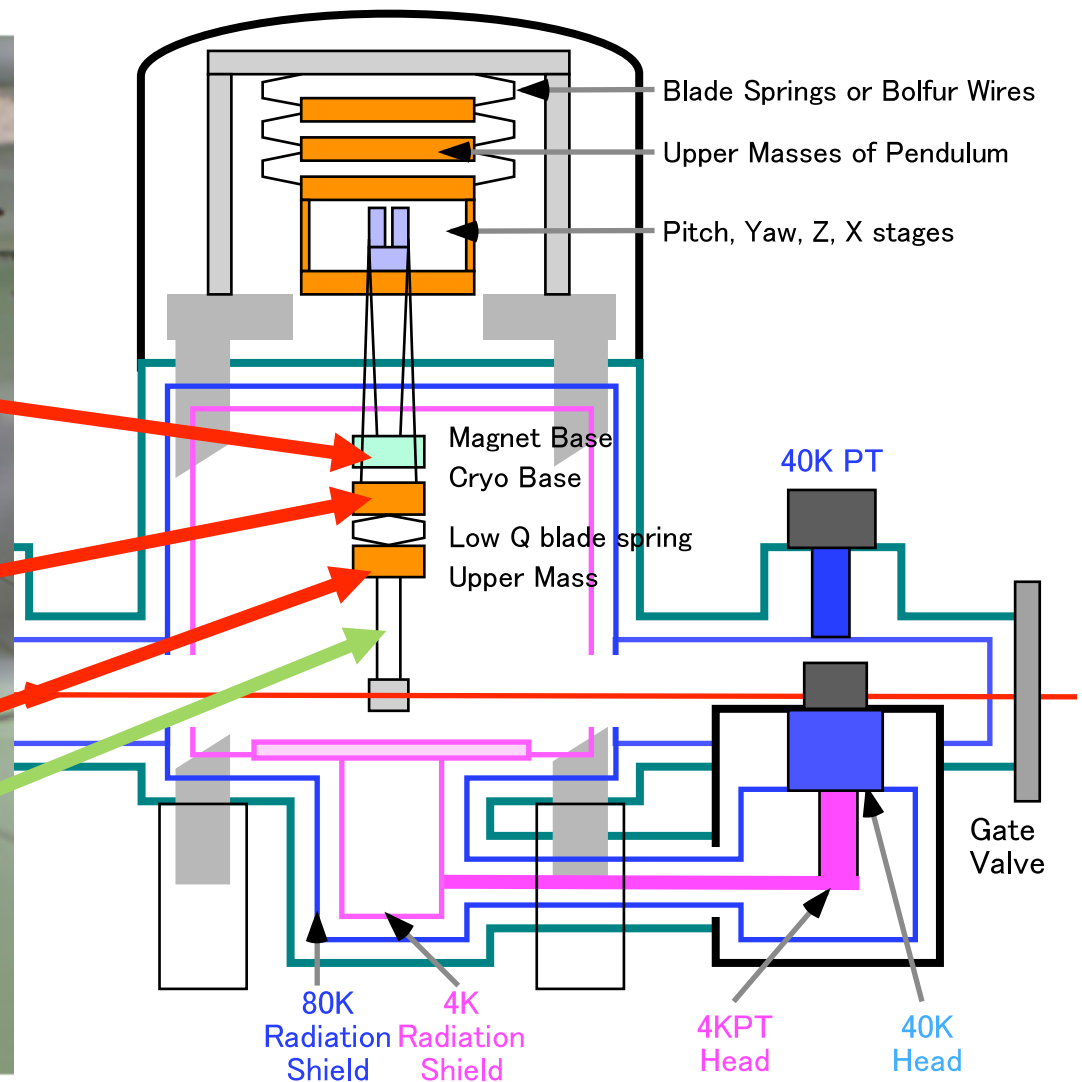
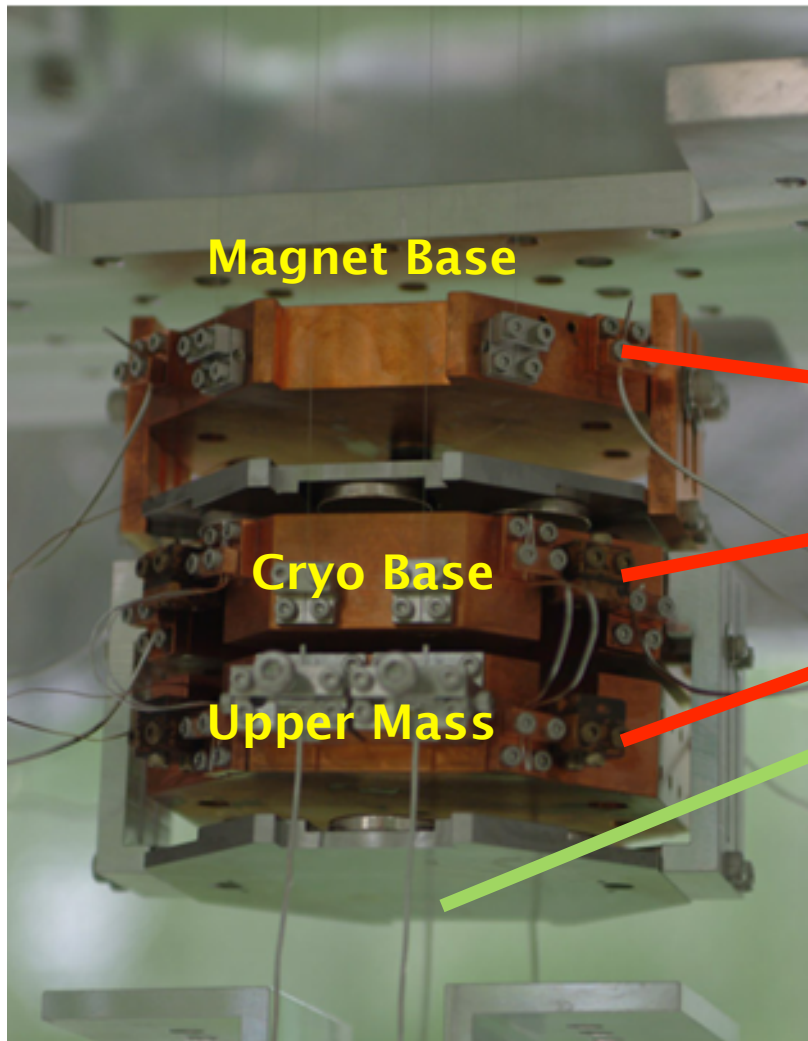


Problem: Eddy current in aluminum coil holders induced by magnets attached on mirror added mechanical loss on pendulum thermal noise

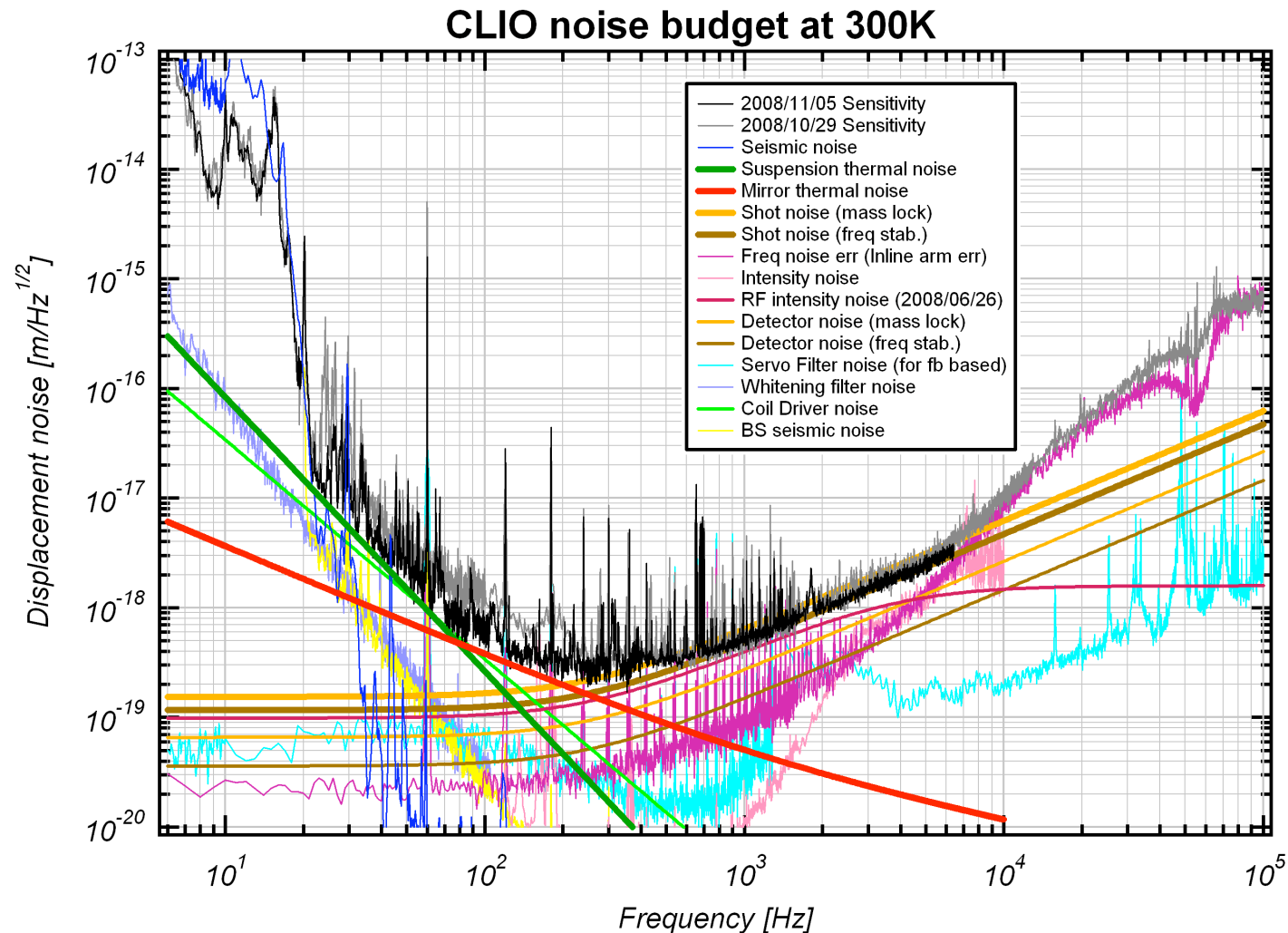


Solution: Aluminum holders were exchanged to ceramic and daifron holders.

CLIO seismic attenuation for cooling



Noise budget



We are ready for *cooling* to observe improved thermal noise!