

Experimental plans for the AEI 10m Prototype

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GWADW Florida,
2009

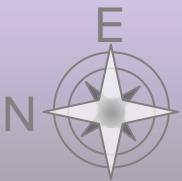
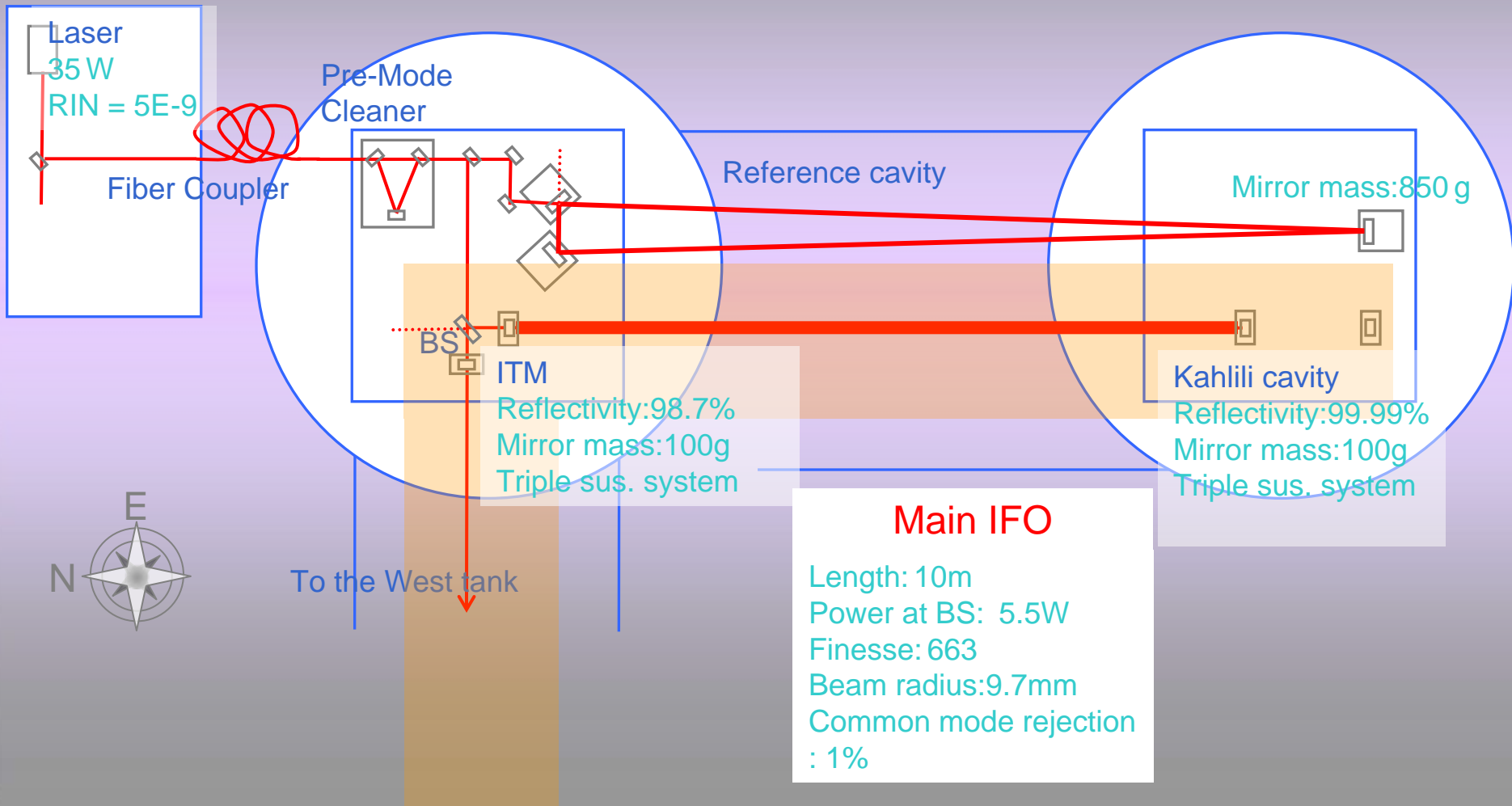
What the prototype provides

Test bed for interferometric experiments that requires very high sensitivity

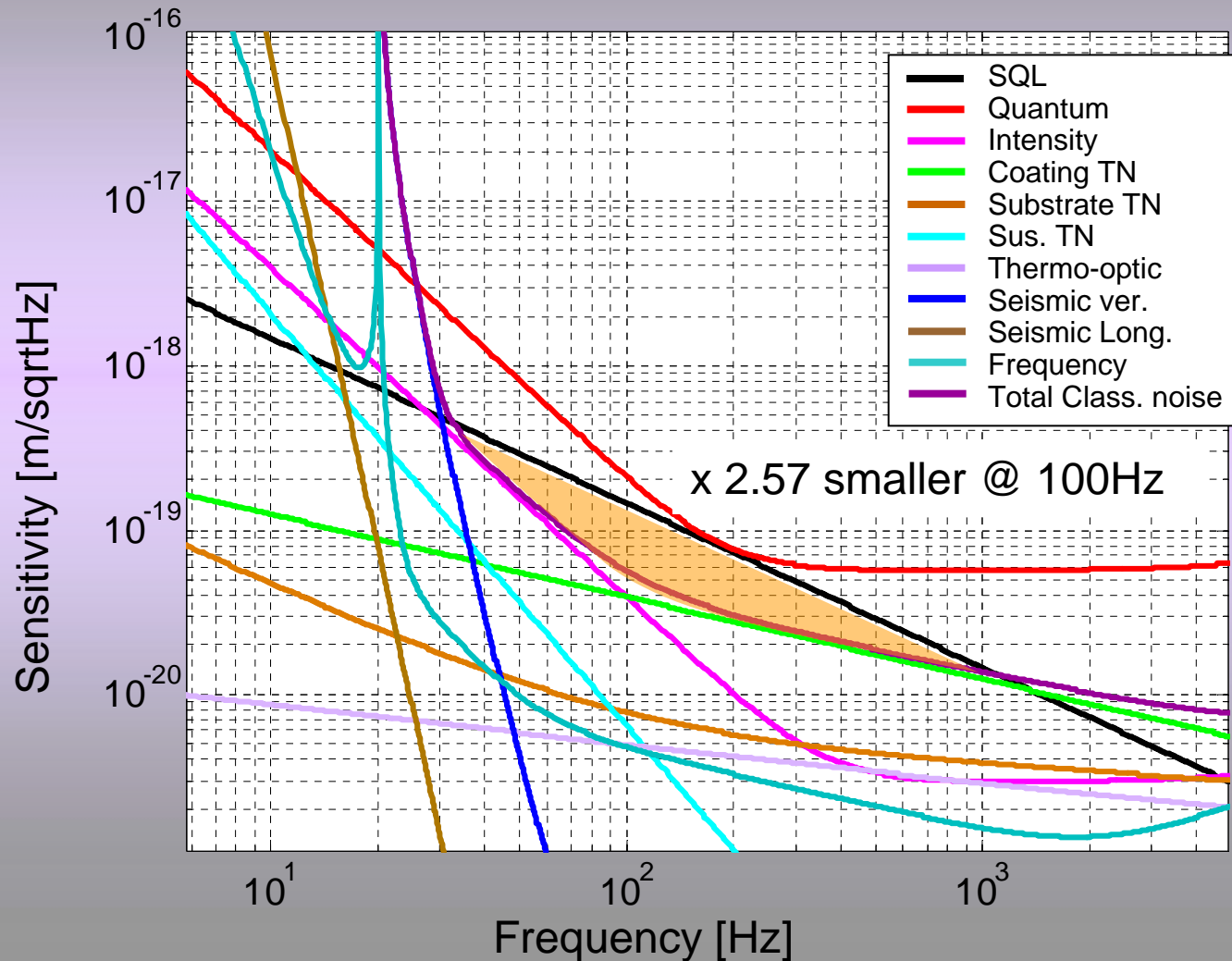
- SUB-SQL experiment (see also K. Somiya)
- Probing the Holographic noise
- etc.

SUB-SQL experiment

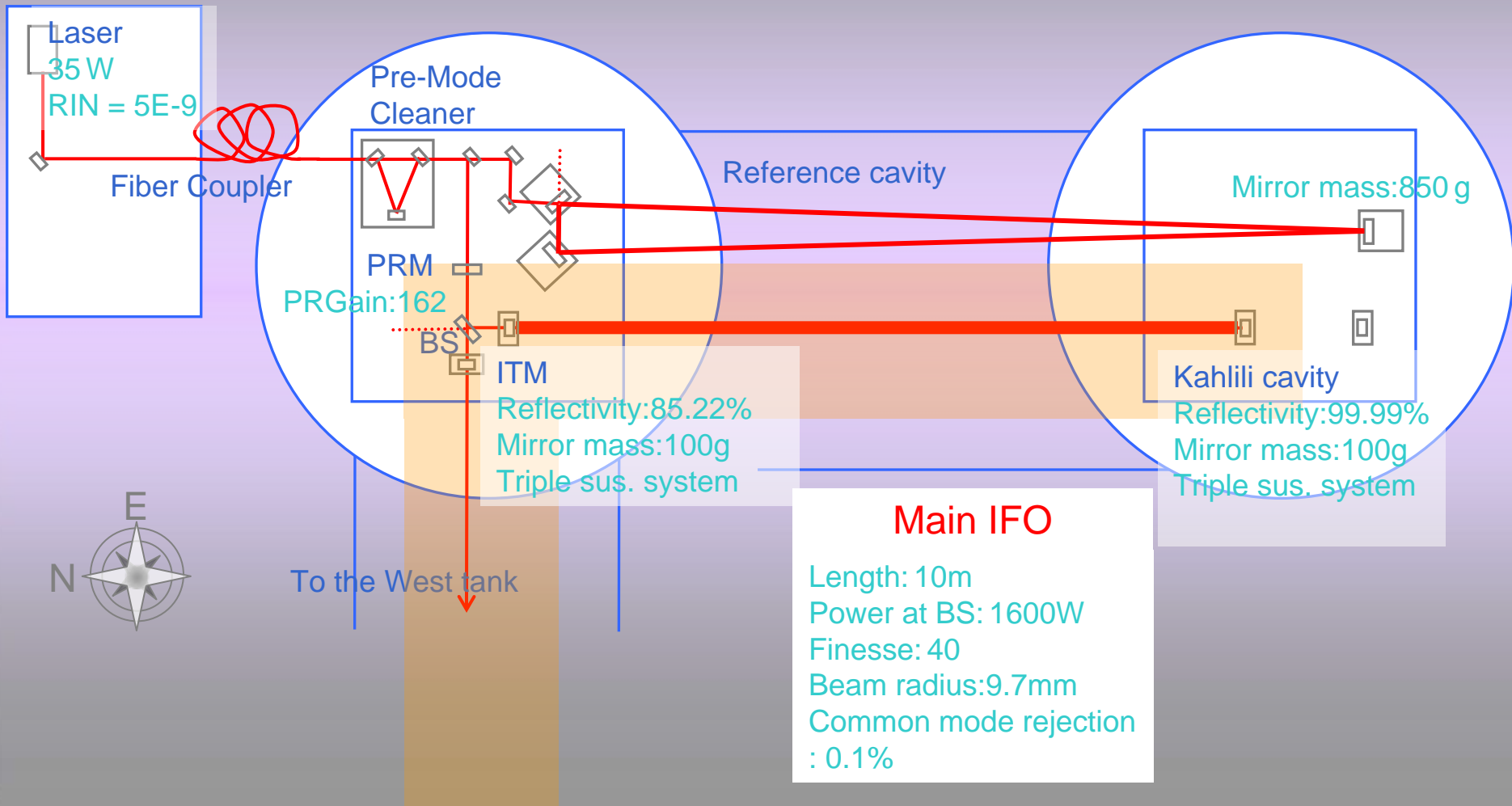
Configuration 1



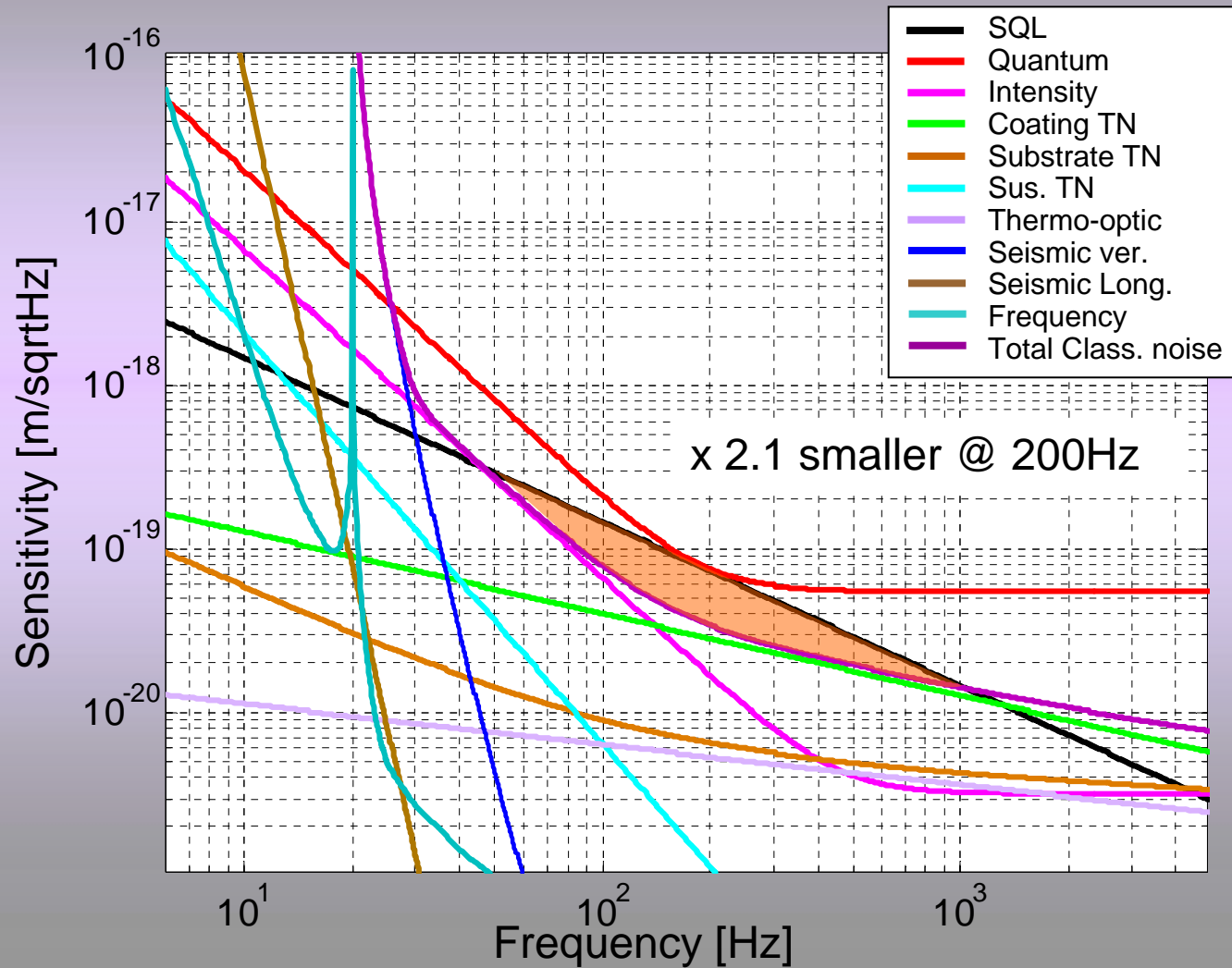
Sensitivity 1



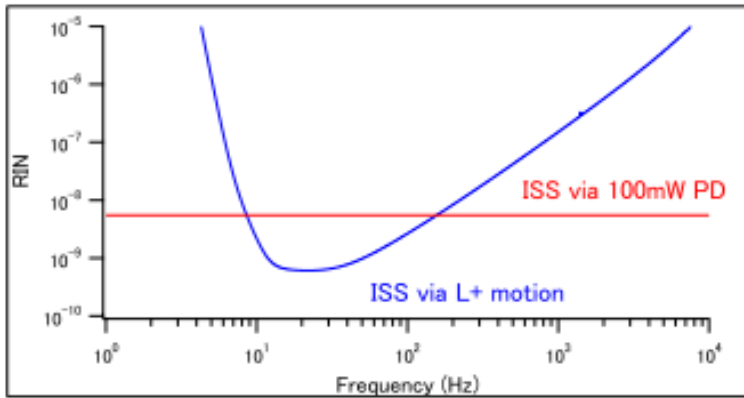
Configuration 2



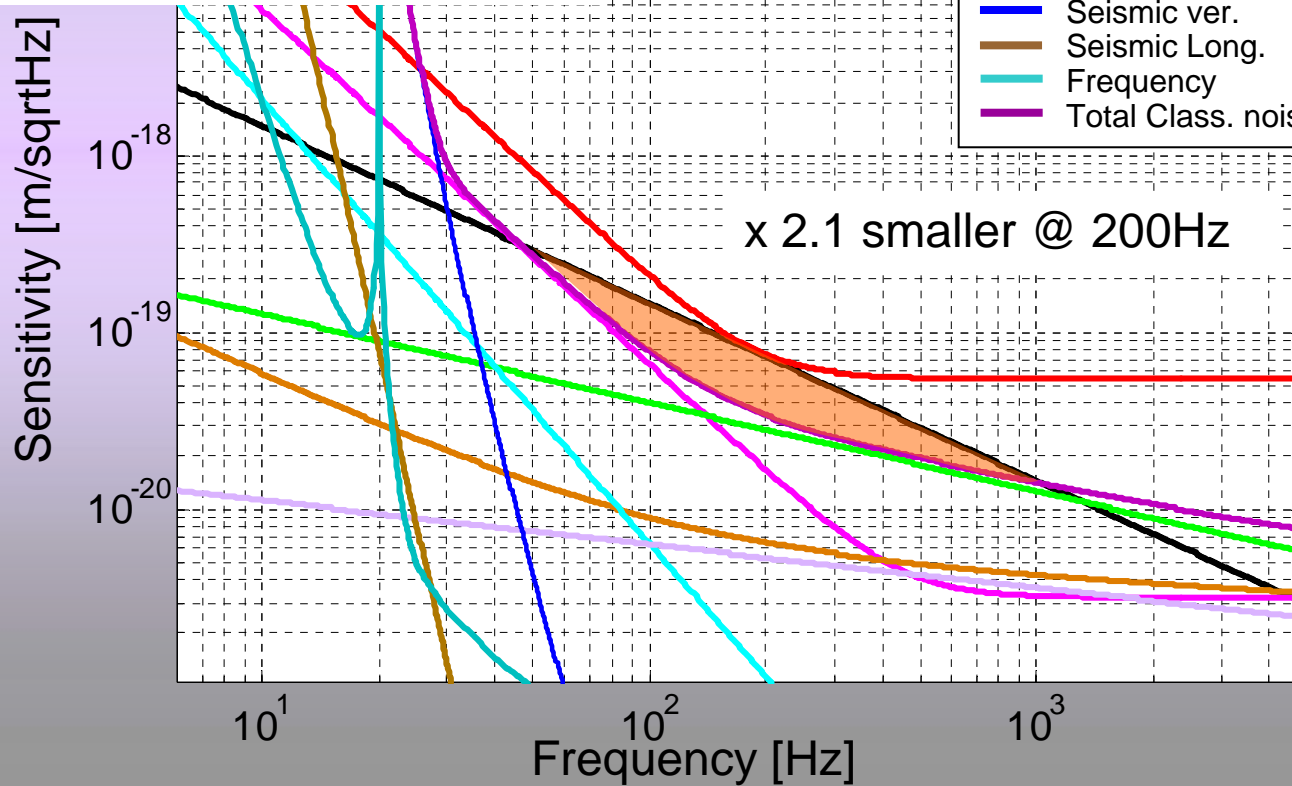
Noise curves



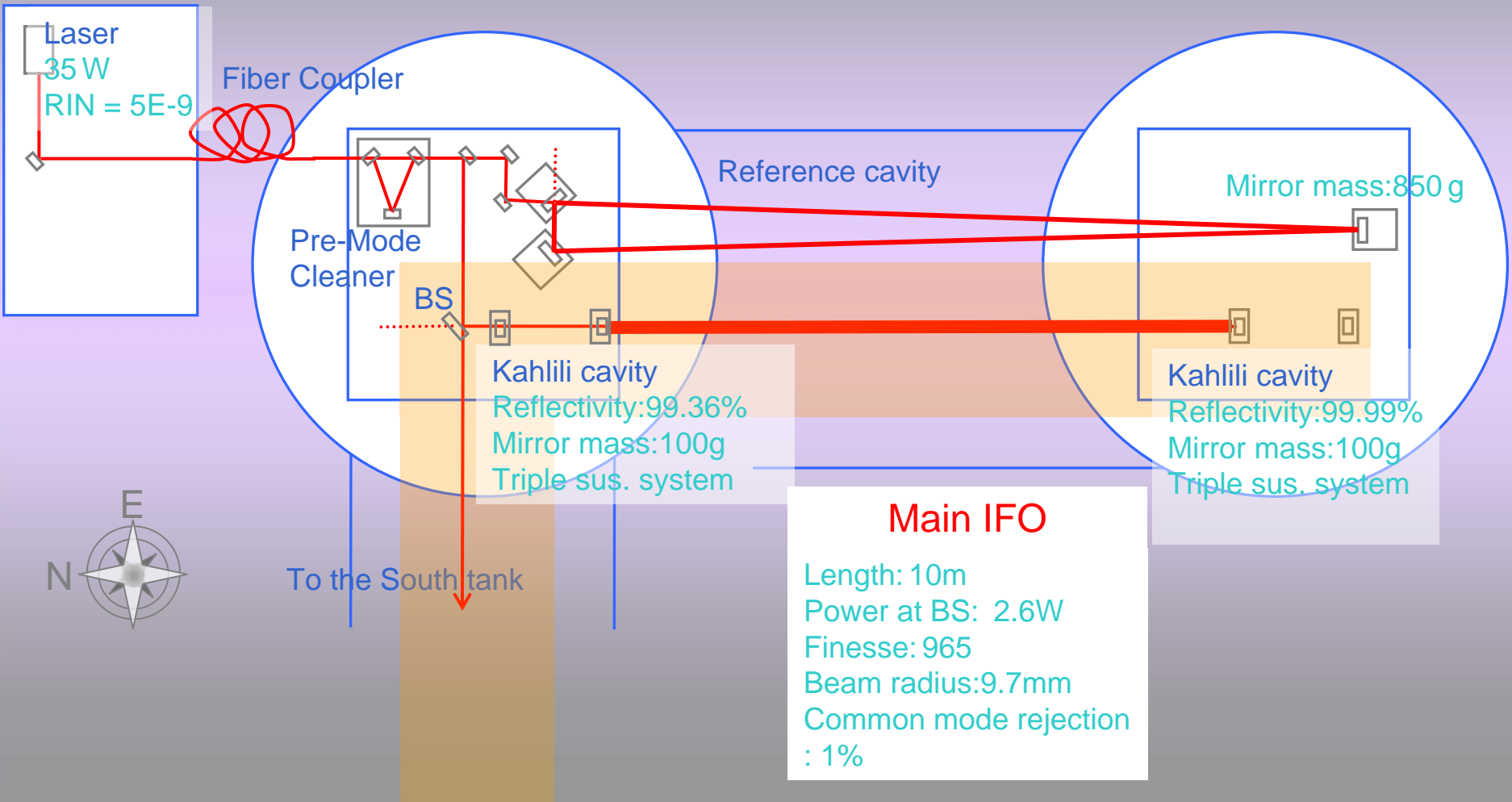
noise curves



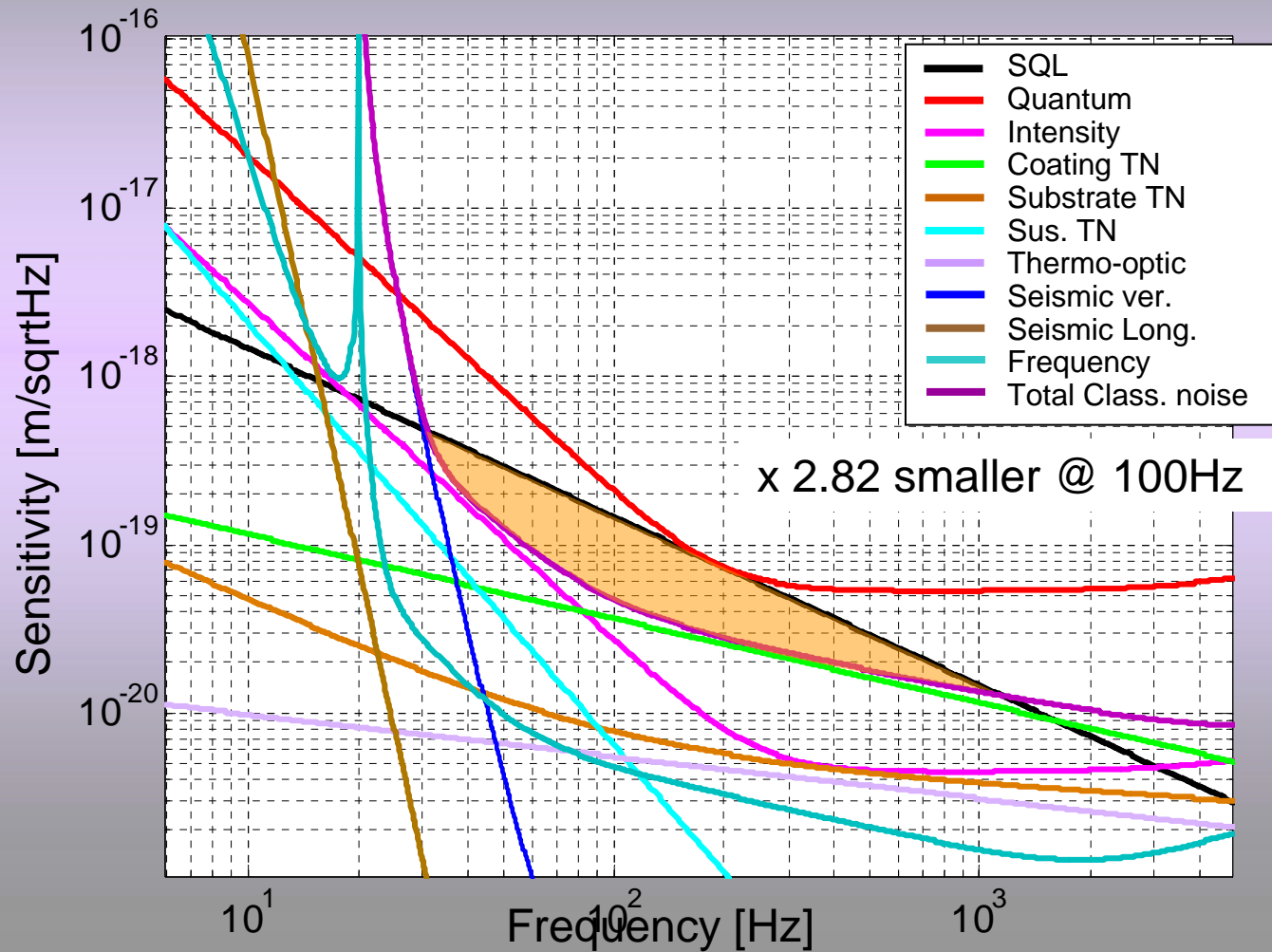
- SQL
- Quantum
- Intensity
- Coating TN
- Substrate TN
- Sus. TN
- Thermo-optic
- Seismic ver.
- Seismic Long.
- Frequency
- Total Class. noise



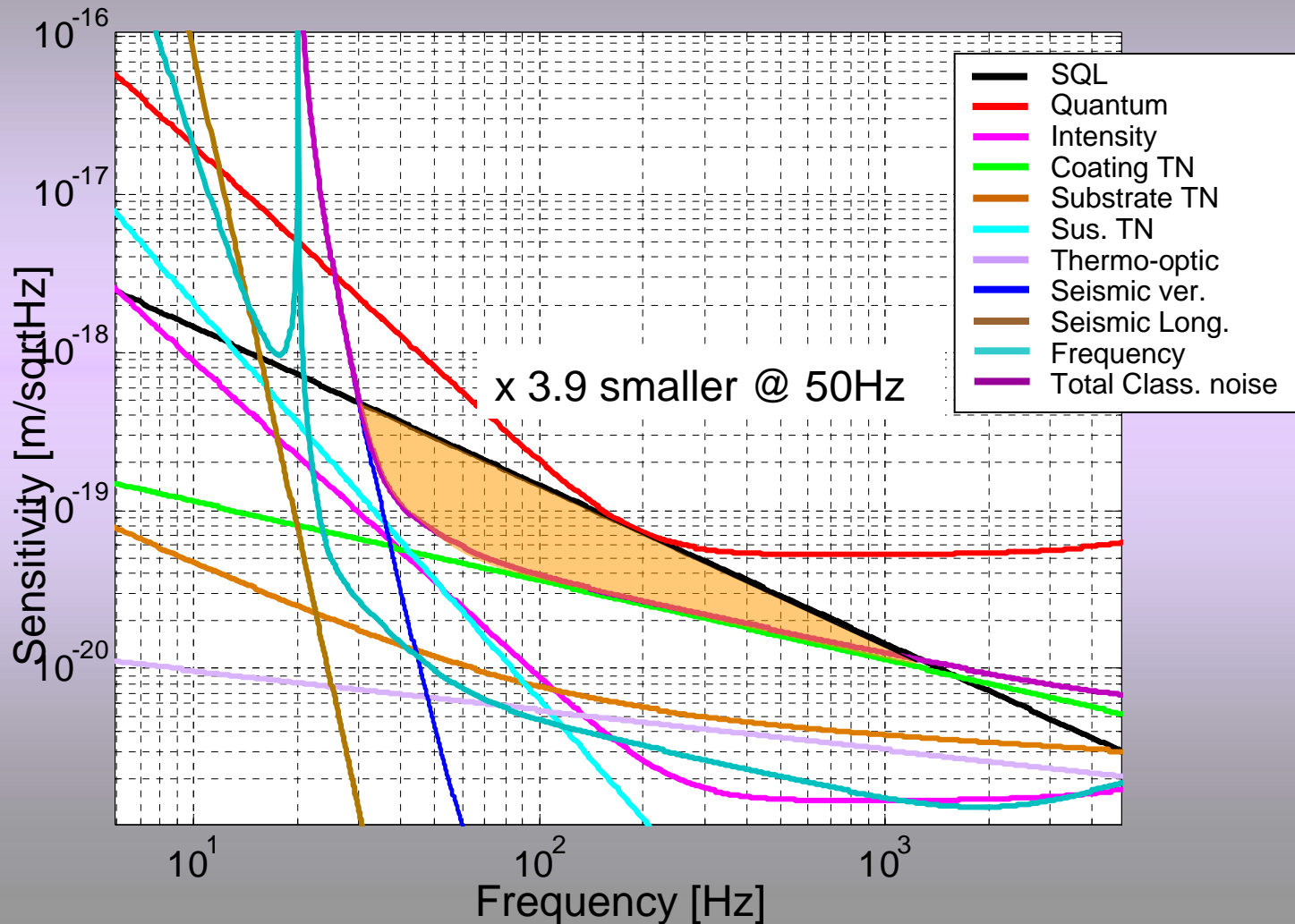
Configuration 3



RIN 5E-9



RIN 10dB squeezing



Are these possible?

- common mode rejection ratio 0.1%
 - Polarization controlled BS ?
- Khalili cavity
 - Possibly complicate control systems
- Better RIN
 - hopefully
 - but not drastically
 - 10dB squeezing?

Other interferometers

- For Holographic noise probing
 - Very sensitive Michelson IFO at high freq.

The end.

Sensitivity 1

with several times better RIN

