

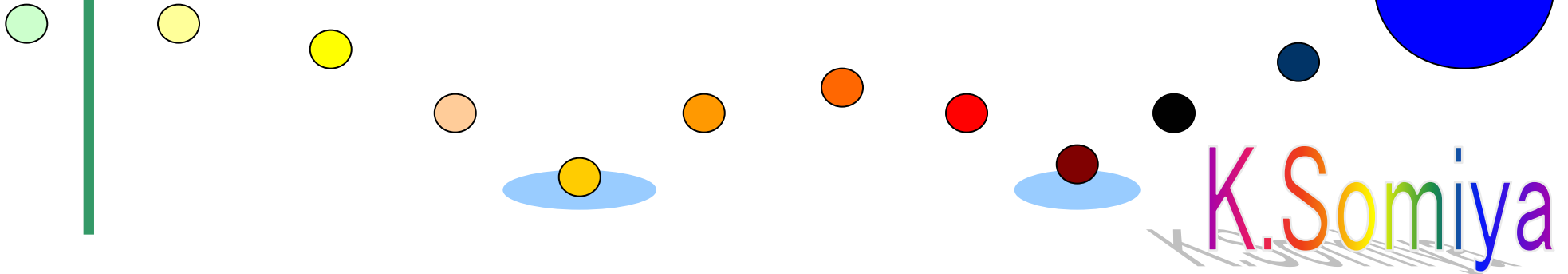
Xylophone and thermal noise

WP3 meeting @ Paris

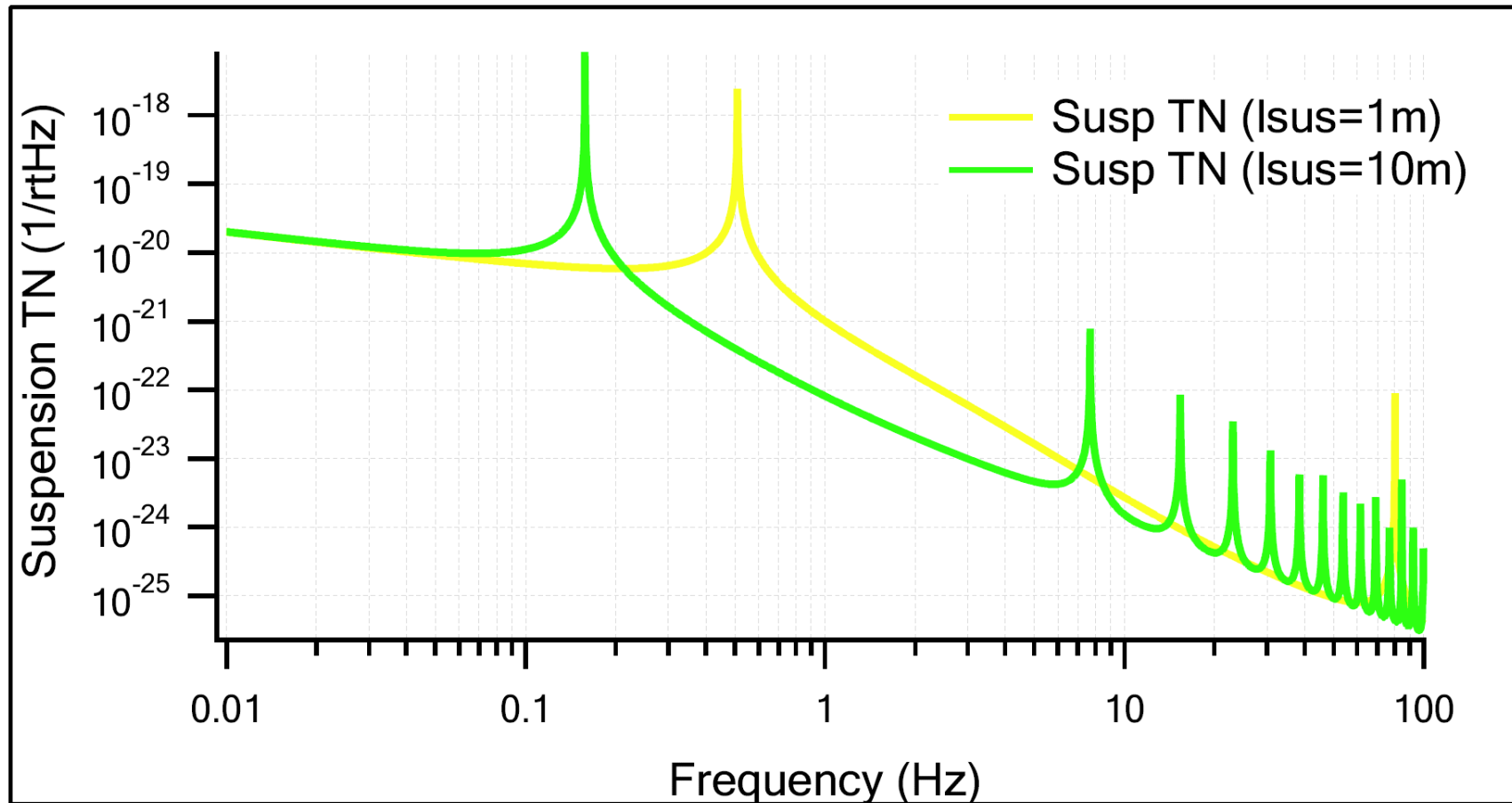
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Kentaro Somiya

Caltech

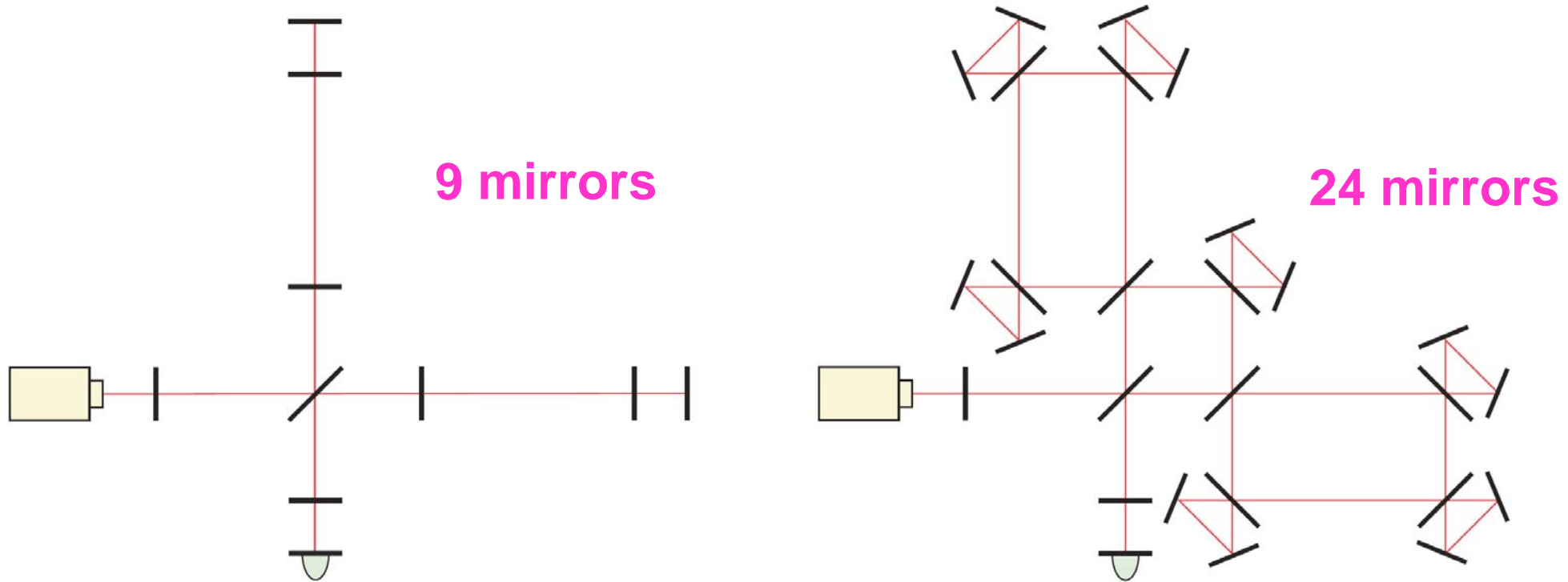


Long-suspension dilemma



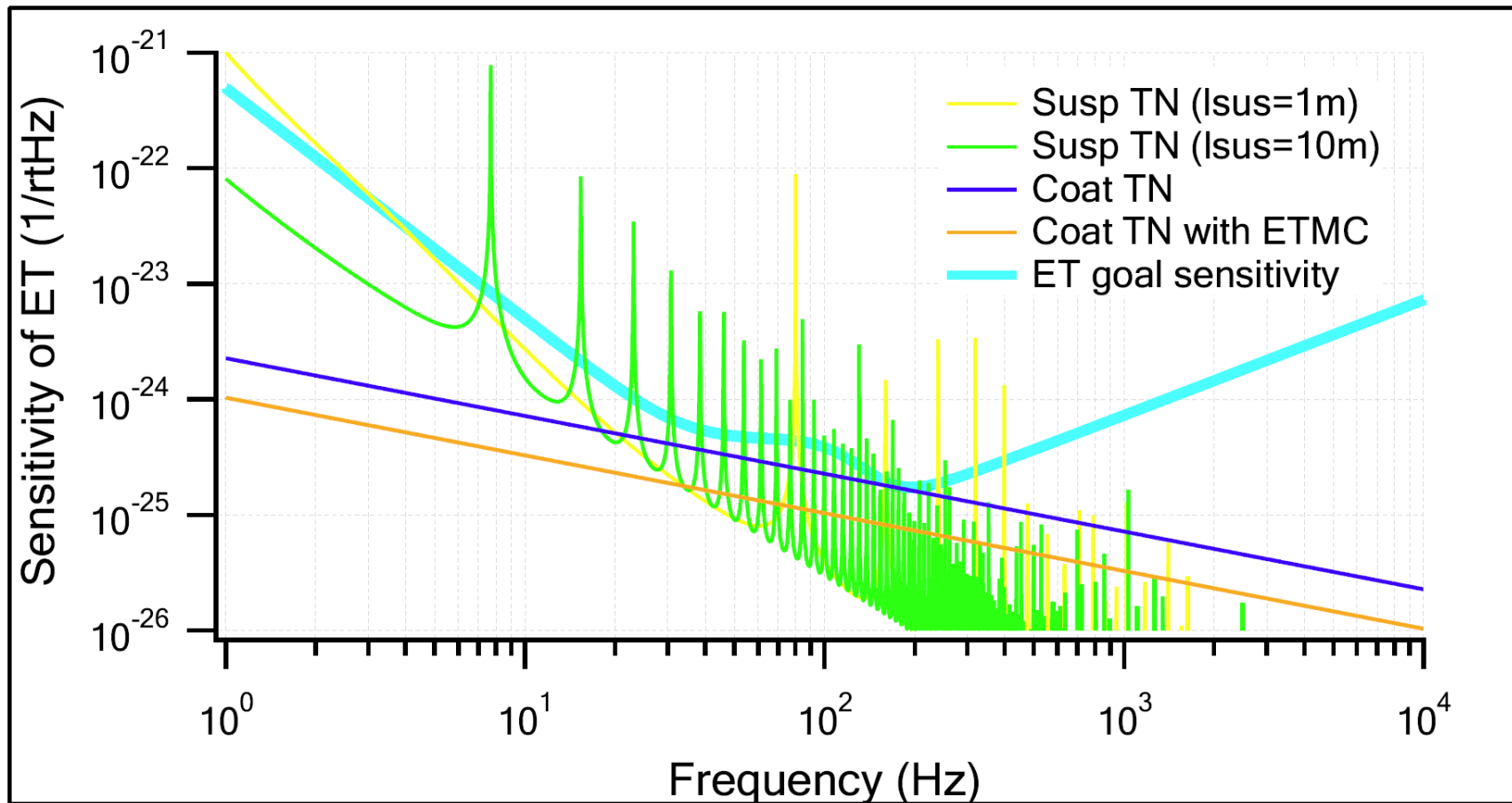
**Better sensitivity with long suspensions at a few Hz,
but many violin modes at a few ten Hz.**

ETMC dilemma



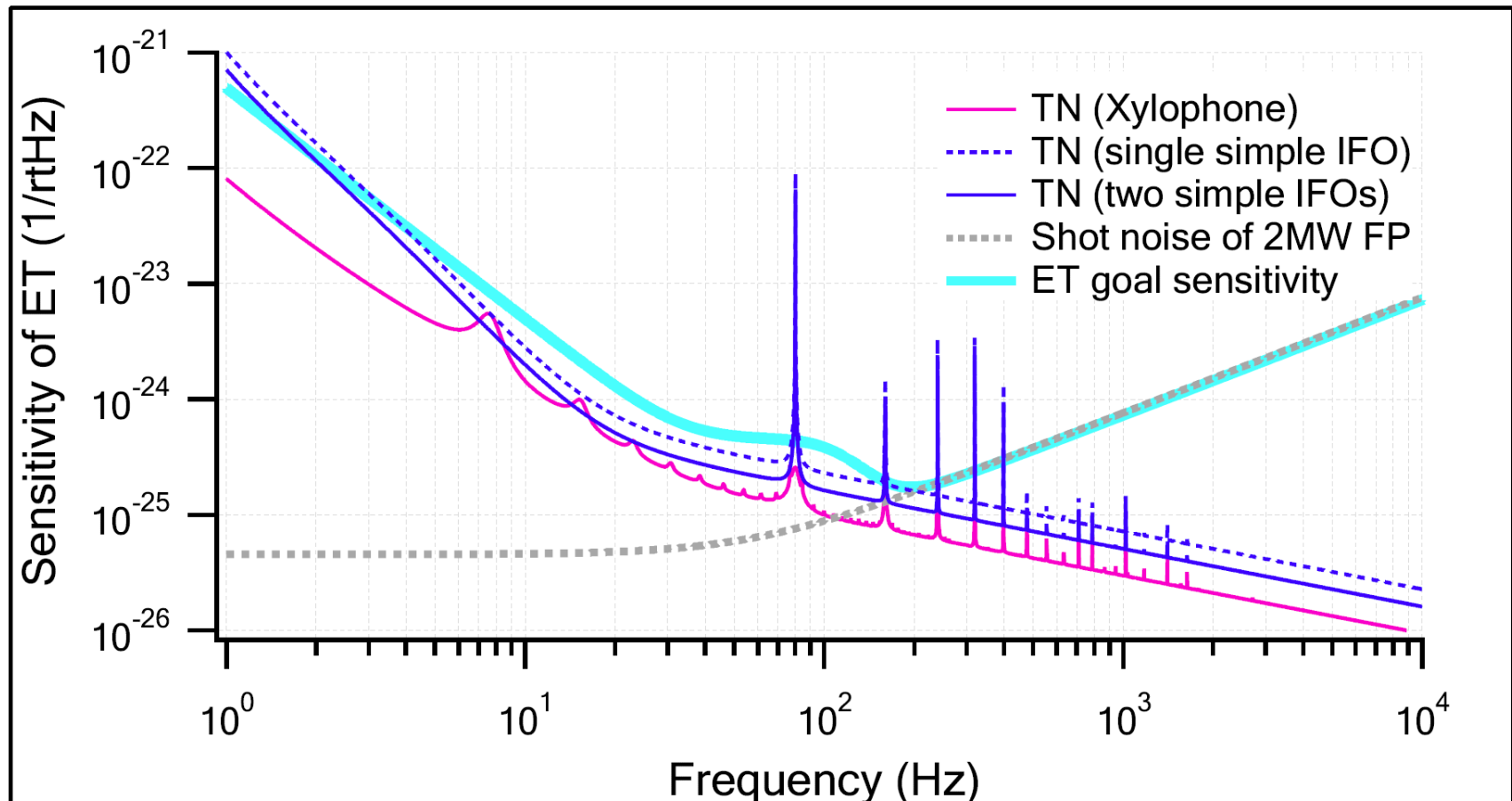
- Too many mirrors for some configurations
- Maybe we can use this for the mid-freq band
(but not for LF/HF)

Thermal noise w/ or w/o these techniques



- Long susp at $f < 10\text{Hz}$, short susp at $f > 10\text{Hz}$
- ETMC may be necessary at $f > 10\text{Hz}$

Xylophone spectrum



- Xylophone seems better than two simple IFOs
- Classical noise can be lower than the ET sensitivity