

Activity under ELiTES

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Outline

- ELiTES stands for
“ET-LCGT interferometric Telescope Exchange of Scientists”
- Project coordinator: Michele Punturo
Japanese coordinator: Kazuaki Kuroda
- ELiTES is a program that supports travel fees of the ET members.
- In the KAGRA side, we applied to
 - (i) JSPS core-to-core program,
 - (ii) JPN-GER bilateral program.This year we didn't get (i) but (ii).

Outline

This is a very good opportunity for KAGRA for 2 reasons.

(1) KAGRA should play a role as a bridge between the 2G (aLIGO etc) and 3G (ET) detectors.

-> We can show our presence in the GW roadmap

(2) We need more people but have no money.

-> ELiTES provides experts "for free"

This year's activity

- Coordinator telecons (March - April)
- Working Package (WP) telecons (April -)
- Thermal noise workshop at Jena (August)
Participants: Chen, Matsumoto, Michimura, Sakakibara,
Sekiguchi, Shibata, Ushiba, and Somiya
- ELiTES 1st General Meeting at Tokyo (October 3rd-4th)
Some participants will stay longer after the meeting to join lab works
- Long-term visitors in fall-winter
- The 4th ET meeting at Hannover (December 4th-5th)

Preliminary list of the lab works

acceptable number



Theme	Location	Supervisor	Description of work	# of ppl
TOBA development	NAOJ	M.Ando	Newtonian noise cancellation, Low-frequency sensitivity design, Cryogenic torsion pendulum, Silica material, 1550nm fiber	2
Cryogenic Silicon Cavity	UT Hongo	Y.Aso	Cryogenic Silicon Cavity for Frequency Stabilization and Coating Thermal Noise Measurement	2
Cryo-cooler response	ICRR	T.Suzuki, N.Kimura, K.Yamamoto	Measurement of mechanical response of a cryo-cooler unit	2
Coating Q measurement	ICRR	E.Hirose	Mechanical Q measurement of the coatings on Sapphire	1
QND experiment	ICRR	K.Agatsuma, D.Friedrich	Various things on a 20mg mirror interferometer	1
SAS prototype	ICRR/NAOJ	R.Takahashi	Pre-isolator prototype at ICRR and payload test at NAOJ	2

We do not yet know how many ET people can join the lab works.
(At least 3-4 grad students and 1-2 researchers from Jena.)
We'll wait and see (the list has been sent to ET).

Activity of each Working Package

ELiTES WP1

WP1 (Cryogenic payload)

Coordinator : Ettore Majorana (Rome, Italy)

Target

(1) Seismic attenuation

for underground interferometer

(2) Payload design,

interface with seismic attenuation

(3) Auxiliary attenuation systems

for thermal links

(4) Actuators, sensors and mirror control

at room and low temperature

ELiTES WP1

WP1 (Cryogenic payload)

Coordinator : Ettore Majorana (Rome, Italy)

Members : 10 (KAGRA) and 24 (Europe) persons

Meeting : 13th of April, 25th of May

**Luca Naticchioni (Rome) will measure
the vibration of the radiation shield
of KAGRA cryostat on this autumn.**

Luca and Ettore visited Japan (23rd-29th April).

ELiTES WP2

WP2 (Cryogenic mirror)

Coordinator : Ronny Nawrodt (Jena, Germany)

Target

(1) Properties of test mass materials

(2) Properties of mirror coating

at low temperature

(3) Thermal and mechanical properties

of suspension elements

(fibers to suspend mirrors)

ELiTES WP2

WP2 (Cryogenic mirror)

Coordinator : Ronny Nawrodt (Jena, Germany)

Members : 10 (KAGRA) and 15 (Europe) persons

Meeting : 2nd of May, 15th of June

ELiTES WP3

WP3 (Cooling system and infrastructure)

Coordinator : Kentaro Somiya (Tokyo Tech)

Target

- (1) Cooling/heating time reduction**
- (2) Contamination control**
- (3) Cryo-cooler vibration isolation**
- (4) Underground-related issues**

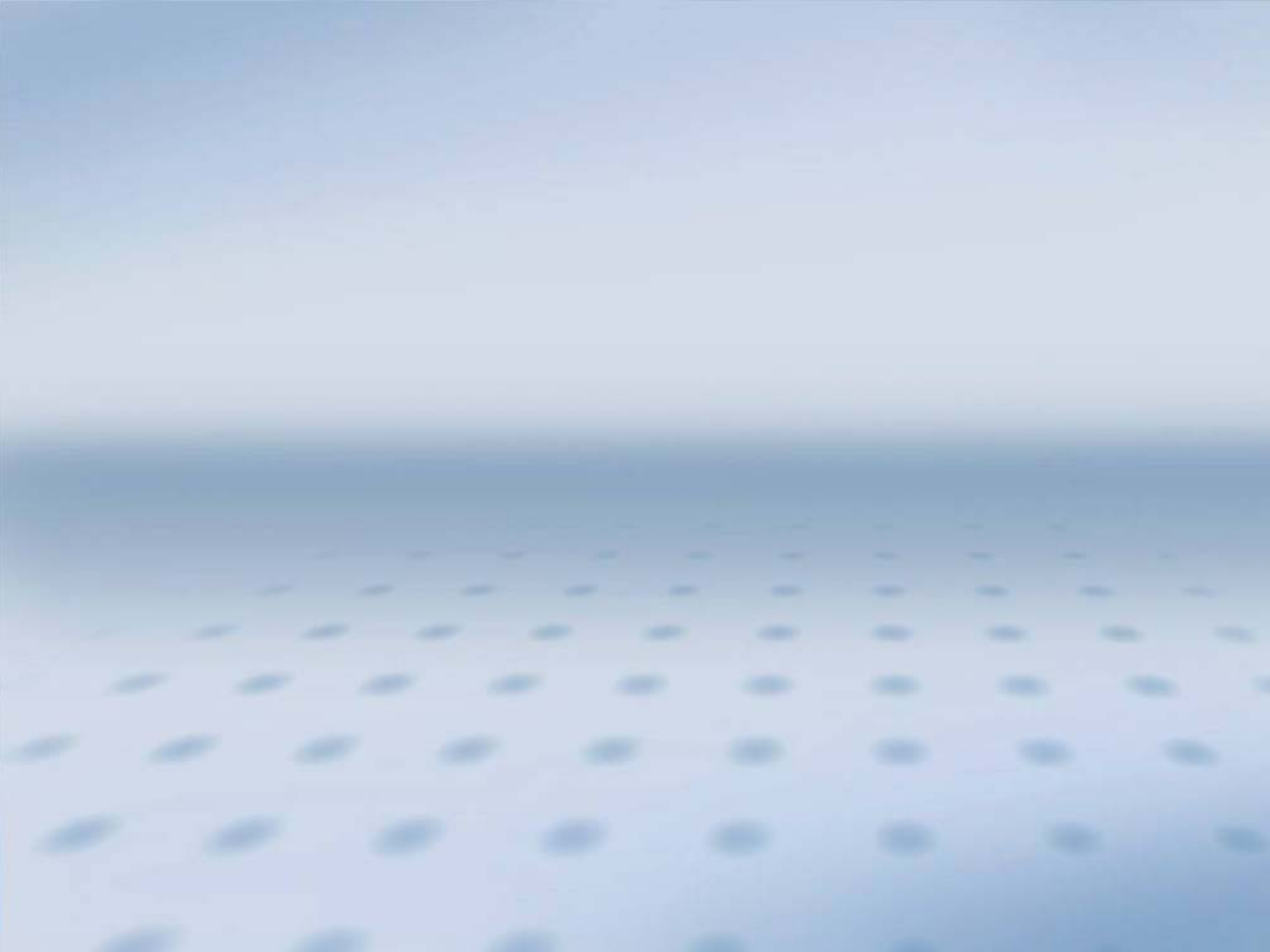
ELiTES WP3

WP3 (Cooling system and infrastructure)

Coordinator : Kentaro Somiya (Tokyo Tech)

Members : 13 (KAGRA) and 16 (Europe) persons

Meeting : June 1st



List of participants

[WP1] ?

[WP2] ?

[WP3]

KAGRA: S.Miyoki, T.Uchiyama, K.Yamamoto, C.Tokoku,
R.DeSalvo, N.Kimura*, T.Suzuki*, Y.Sakakibara,
Y.Michimura, Y.Susa, S.Ueda, K.Somiya

Jena: R.Nawrodt, D.Heinert, J.Komma, G.Hofmann, C.Schwarz

Rome: F.Ricci, E.Majorana

Glasgow: S.Rowan, S.Hild

NIKHEF: J.van den Brand, A.Bertolini, M.Beker, D.Rabeling

Perugia: M.Punturo

Others: H.Yamamoto, M.Budroni