

# GRAvitational-waves Science&technology Symposium (GRASS 2019)

## Thursday 17 October 2019

### Registration - Sala Paladin (08:00-08:30)

### Welcome - Sala Paladin (08:30-08:40)

### Other challenges for future GW detectors: OTHER A - Sala Paladin (08:40-10:55)

time	title	presenter
08:40	Third Generation Gravitational Wave detectors: the challenge of Einstein Telescope in Europe	MAJORANA, Ettore
09:15	Australia's take on GW experimental research in the long term	OTTAWAY, David
09:40	Dynamical thermal compensation techniques for Advanced Virgo	NARDECCHIA, Ilaria
10:05	6D inertial seismic isolation system	PROKHOROV, Leonid
10:30	Towards a silicon monolithic suspension	TRAVASSO, Flavio

### New strategies for quantum noise reduction: QUANT A - Sala Paladin (11:15-13:30)

time	title	presenter
11:15	Studies of quantum noise in GW detectors, optomechanical experiments, and axion searches	MARTYNOV, Denis
11:50	6dB of squeezing level at GEO 600	BERGAMIN, Fabio
12:15	Frequency dependent squeezing experiment at TAMA	LEONARDI, Matteo
12:40	Coupled cavity optomechanics	DMITRIEV, Artemii
13:05	Room temperature optomechanical squeezing	AGGARWAL, Nancy

### Ultra-low-noise optical coatings: COAT - Sala Paladin (14:20-16:35)

time	title	presenter
14:20	Numerical modelling of low-T oxide film growth	LEMAITRE, Anael
14:55	Modeling and simulations of current and prospective coating materials	PUOSI, Francesco
15:20	Multimaterial Coatings for 3rd Generation Gravitational Wave Detectors	MURRAY, Peter
15:45	Dissipation in a Tantalum film from 10K to 150K from thermal noise measurements	BELLON, Ludovic
16:10	Annealing effects on the mechanical losses of fluorides thin films	BISCHI, Matteo

## Friday 18 October 2019

### **Thermal noise in and out of thermodynamic equilibrium: THERM - Sala Paladin (08:30-11:10)**

time	title	presenter
08:30	Faster than Nature: Engineered swift equilibration of small systems.	MARTÍNEZ, Ignacio A.
09:05	Operating high sensitivity measurement apparatus out of equilibrium	NERI, Igor
09:30	Thermal fluctuations in an out-of-equilibrium state	FONTANA, Alex
09:55	Measuring (excess?) thermal noise on a macroscopic oscillator in non-equilibrium conditions	CIANI, Giacomo
10:20	Thermal gradients and Energy equipartition - numerical and theoretical	DE GREGORIO, Paolo
10:45	A thermoelastic extension of the fluctuation dissipation theorem in nonequilibrium states	FALASCO, Gianmaria

### **New strategies for quantum noise reduction: QUANT B - Sala Paladin (11:30-13:10)**

time	title	presenter
11:30	Improving Gravitational-Wave Detectors with Entangled Light	STEINLECHNER, Sebastian
11:55	EPR experiment for a broadband quantum noise reduction in gravitational wave detectors	SEQUINO, Valeria
12:20	Small scale suspended interferometer for ponderomotive squeezing as test bench for EPR squeezer integration in Advanced Virgo	DI PACE, Sibilla
12:45	Electronic hardware and software development for EPR squeezer	BAWAJ, Mateusz

### **Advanced cryogenics: CRYO - Sala Paladin (14:10-16:00)**

time	title	presenter
14:10	Cryogenic mirror suspension in KAGRA	USHIBA, Takafumi
14:45	Cooling System of KAGRA	TOMARU, Takayuki
15:10	Cryogenic challenges for third generation gravitational wave interferometers	POGGIANI, Rosa
15:35	Prototype Cryogenic Silicon Suspension Activities at Glasgow	EDDOLLS, Graeme

### **Other challenges for future GW detectors: OTHER B - Sala Paladin (16:20-19:00)**

time	title	presenter
16:20	Space-borne GW detectors	VITALE, Stefano
16:55	ET Pathfinder	STEINLECHNER, Jessica
17:20	Guidelines for a Suspension system of the 3rd generation detectors for Gravitational Waves	FRASCONI, Franco
17:45	Updates on silica fibers production and characterization for future gravitational waves detectors	MONTANI, Matteo
18:10	Results of the long-term measurements from the Mátra Gravitational and Geophysical Laboratory	FENYVESI, Edit
18:35	A testbed for Tilt-To-Length coupling and Differential-Wavefront-Sensing performance in LISA	PIZZELLA, Alvise