

# Gravitational Wave Advanced Detector Workshop 2017 Program

May 7th-12th, 2017, Hamilton Island Queensland, Australia

Sunday May 7

Registration		16:00 - 18:00	Location
Welcome Reception		17:30 - 19:30	Main Pool Area

Monday May 8

Registration		7:45 - 8:15	Endeavour Room - Resort Side
Welcome		8:15	Endeavour Room - Resort Side
Setting the Stage	D. McClelland	8:30	
Plenary 1: Where do we stand?		9:00 - 10:00	Endeavour Room - Resort Side
LIGO	D. Sigg	9:00	
Virgo	A. Rocchi	9:20	
KAGRA	O. Miyakawa	9:40	
Plenary 2: Science Case for Future Detectors 1		10:00 - 10:30	Endeavour Room - Resort Side
Tests of GR	S. Ballmer	10:00	
Morning Tea		10:30	Endeavour Room - Beach Side
Plenary 2: Science Case for Future Detectors 2		11:00 - 12:30	Endeavour Room - Resort Side
BBH Astrophysics	S. Vitale	11:00	
Stochastic searches and removal techniques	J. Harms	11:30	
Science case for a next-gen detector in Australia	D. Blair	12:00	
Discussion		12:20	
Lunch		12:30 - 16:00	Endeavour Room - Beach Side
Plenary 3: Coordination of Future Development of New Large Detectors		16:00 - 17:00	Endeavour Room - Resort Side
GWIC 3G Planning Process	D. McClelland	16:00	
Presentation and discussion on GWIC 3G coordination groups	H. Lueck	16:20	
Discussion	D. McClelland	16:40	
Plenary 4: Space Based Interferometry		17:00 - 17:30	Endeavour Room - Resort Side
Benchtop test of a new intersatellite laser interferometry architecture	S. Franci	17:00	
Afternoon Tea		17:30 - 18:00	Endeavour Room - Beach Side
Plenary 5: Workshop Goals		18:00 - 19:30	Endeavour Room - Resort Side
Controls Workshop Goals	D. Coyne	18:00	
Low Frequency Workshop Goals	J. Harms	18:15	
Characterising the ASC system in aLIGO	M. Kasprzack	18:30	
Particle Swarm Optimisation for Sensor Correction	C. Mow-Lowry	18:45	
What does low frequency control look like in the 2G and 3G era?	J. Kissel	19:00	
Discussion		19:10	

Tuesday May 9

Registration		8:30 - 9:00	Endeavour Room - Resort Side
Plenary 6a: Upgrade 2G Detectors (A+, aV+)		9:00 - 10:30	Endeavour Room - Resort Side
LIGO Squeezer update	L. McCuller	9:00	
Virgo upgrade plans	E. Majorana	9:20	
KAGRA+ upgrade plans	Y. Michimura	9:40	
Voyager update	C. Wipf	10:00	
Morning Tea		10:30 - 11:00	Endeavour Room - Beach Side
Plenary 6b: New Detectors in Existing Facilities		11:00 - 12:30	Endeavour Room - Resort Side

	LIGO A+ upgrade	M. Zucker	11:00	
	Larger Mirrors	G. Cagnoli	11:45	
	Limits of high laser power	S. Dwyer	12:05	
	Lunch		12:30 - 16:00	Endeavour Room - Beach Side
	Plenary 7: Future Detectors with New Facilities		16:00 - 17:30	Endeavour Room - Resort Side
	Updates of seismic measurements for various sites	J. Van den Brand	16:00	
	Progress on speed meter research in the last year	S. Danilishin	16:20	
	Hydroxide Catalysis bonds: update on Young's modulus and thermal noise	M. Phelps	16:40	
	Scatterometer at NAOJ: applying material investigations for KAGRA		17:00	
	Study of parametric instability for future longer arm GW detectors	J. Zhang	17:20	
	High Q multi-stage passive dampers for Parametric Instability Control	J. Li	17:40	
	Poster Session		17:45 - 19:45	Bougainvillea Pool & Marquee
	Plenary 8a: Cryogenics		9:00 - 10:30	Endeavour Room - Resort Side
	Introduction to the session	G. Hammond	9:00	
	Cryogenic development in KAGRA	K. Yamamoto	9:05	
	Cryogenic payloads, low-frequency sensor development	T. Ushiba	9:25	
	Vibration measurements at low temperature	K. Yamamoto	9:45	
	Jena Update: overview of material properties	G. Hammond	10:05	
	Morning Tea		10:30 - 11:00	Endeavour Room - Beach Side
	Plenary 8b: Cryogenics		11:00 - 12:30	Endeavour Room - Resort Side
	Glasgow update: Thermal conductivity measurements of silicon and HCB bonds	M. Masso-Reid	11:00	
	Caltech update: Silicon for LIGO Voyager	J. Eichholz	11:20	
	Roma update: Mechanical loss and thermal conductivity of sapphiric suspension elements	E. Majorana	11:40	
	Discussion: cooling of test masses		12:00	
	Lunch		12:30 - 16:00	Endeavour Room - Beach Side
	Plenary 9a: Thermal Noise and Coatings		16:00 - 17:30	Endeavour Room - Resort Side
	Thermal noise in spring-antispring systems	J. Harms	16:00	
	LMA coatings update	M. Granata	16:20	
	TBD	J. Steinlechner	16:40	
	MIT multimode coating thermal noise measurement	S. Gras	17:00	
	Suspension thermal noise in future detectors	G. Hammond	17:20	
	Afternoon Tea		17:30 - 18:00	Endeavour Room - Beach Side
	Plenary 9b: Thermal Noise and Coatings		18:00 - 19:30	Endeavour Room - Resort Side
	Latest results on crystalline coatings characterization	R. Flaminio	18:00	
	Work towards cryogenic mirrors and coatings	I. Martin	18:20	
	aSi coating development	D. Vine	18:40	
	Non-equilibrium thermal noise	R. Glaser	19:00	
	Workshop 1a: Controls		9:00 - 10:30	Endeavour Room - Resort Side
	Suspension control in AdV: effective noise projection	L. Trozzo	9:00	
	Global Inverted Pendulum Control	E. Majorana	9:20	
	LQG Control tests of Inverted Pendulum	L. Trozzo	9:40	
	Discussion		10:00	
	Workshop 2a: Low Frequency		9:00 - 10:30	Endeavour Room - Beach Side
	TBD	V. Mandic	9:00	

Wednesday May 10

Thursday May 11

	TBD	M. Bader	9:20	
	TBD	D. Fiorucci	9:40	
	Seismic noise investigation and cancellation plans at Gingin	J. McCann	10:00	
	Interpreting LHO array data	J. Harms	10:15	
	Morning Tea		10:30 - 11:00	Endeavour Room - Beach Side
	Workshop 1b: Controls		11:00 - 12:30	Endeavour Room - Resort Side
	Machine Learning for lock maintenance	J. Rollins	11:00	
	Next generation design considerations for calibration	J. Kissel	11:20	
	Control of the KAGRA cryogenic vibration isolation system	K. Okutomi	11:40	
	Discussion		12:00	
	Workshop 2b: Low Frequency		11:00 - 12:30	Endeavour Room - Beach Side
	Status of TOBA for Low-frequency GW Observations	M. Ando	11:00	
	TBD	D. McManus	11:20	
	Atom interferometry	N. Robins	11:40	
	Discussion		12:00	
	Lunch		12:30 - 16:00	Endeavour Room - Beach Side
	Plenary 10a: IFO Configurations and Light Sources		16:00 - 17:30	Endeavour Room - Resort Side
	Single-frequency fiber amplifier development for next-generation GWDs	B. Willke	16:00	
	High Power Laser at 2 $\mu$ m	D. Ottaway	16:20	
	Squeezing at 2 $\mu$ m	G. Mansell	16:40	
	Fundamental quantum limit	S. Danilishin	17:00	
	Afternoon Tea		17:30 - 18:00	Endeavour Room - Beach Side
	Plenary 10b: IFO Configurations and Light Sources		18:00 - 19:30	Endeavour Room - Resort Side
	Optomechanics lessons from a gram-scale interferometer	A. Buikema	18:00	
	Optomechanical squeezing in the audio band	N. Aggarwal	18:20	
	Speedmeter experiments and theory	S. Hild	18:40	
	Conditional squeezing injection for GEO 600	A. Freise	17:00	
	Conference Dinner		20:00 - 23:00	The Outrigger Restaurant
	Plenary 11: IFO Wavefront Sensing		9:00 - 10:30	Endeavour Room - Resort Side
	Hawkeye actuator for future mode-matching	H. Cao	9:00	
	Thoughts and plans for aLIGO adaptive mode matching for squeezer upgrades	J. Sanders	9:20	
	Compensating for mode-matching degradation by squeezing higher order modes	D. Toyra	9:40	
	Lessons learned from Adv TCS and TCS in Adv+ and ET	A. Rocchi	10:00	
	Discussion		10:20	
	Morning Tea		10:30 - 11:00	Endeavour Room - Beach Side
	Report from Controls Workshop		11:00 - 11:45	Endeavour Room - Resort Side
	Report from Low Frequency Workshop		11:45 - 12:30	Endeavour Room - Resort Side
	Lunch		12:30 - 17:30	Endeavour Room - Beach Side
	Afternoon Tea		17:30 - 18:00	Endeavour Room - Beach Side
	Town Hall & Future Plans		18:00 - 19:00	Endeavour Room - Resort Side
	Summary		19:00 - 19:30	Endeavour Room - Resort Side

Friday May 12



- 1 Chart Room / Wild Oats Boardroom
- 2 Conference Centre
- 3 Endeavour Room
- 4 The Outrigger
- 5 Bougainvillea Marquee