



Micromechanics Conference

February 2 to 7, 2025 - Obergurgl, Tyrol, Austria

Organized by EU project SuperMeQ: Gerhard Kirchmair (IQOQI Innsbruck), Witlef Wieczorek (Chalmers), Michael Trupke (IQOQI Vienna), Anja Metelmann (KIT), Carles Navau (UAB Barcelona), Hans Huebl (Walther Meissner Institut)

Sunday 2 February 2025

19:00	Welcome drink and dinner Bus 1
21:00	Welcome drink and dinner Bus 2

Monday 3 February 2025

Time	Name	Title
7:00	Breakfast	
8:55	Welcome message from Gerhard Kirchmair (IQOQI Innsbruck)	
9:00	John Davis (University of Alberta)	YIG Photonic Crystals
9:40	Gary Steele (TU Delft)	Optomechanics with nonlinear quantum cavities: exciting prospects, tough challenges, and unexpected physics
10:20	Coffee Break	
10:50	Bas Hensen (Leiden University)	Magnetic levitation at room- and cryogenic temperatures for large mass superpositions
11:10	Marta Cagetti (ICFO)	Exploring non linear mechanics in carbon nanotube via charge sensor
11:30	Lukas Deeg (IQOQI Innsbruck)	Optomechanical backaction in the bistable regime
12:00	Break	
16:00	Coffee & Snack Break	
16:45	Tracy Northup (University of Innsbruck)	Co-trapping an ion and a nanoparticle in a two-frequency Paul trap
17:25	Gabriel Hétet (ENS)	Forces on micro-mechanical oscillators from NV centers
18:05	Short break	
18:15	Oriol Romero Isart (ICFO)	Macroscopic Quantum Superposition States of a Nanoparticle via Dynamics in Nonharmonic Potentials
18:55	Dinner	
20:45	Poster session	

Tuesday 4 February 2025

Time	Name	Title
7:00	Breakfast	
9:00	Michèle Heurs (Leibniz Universität Hannover)	Interferometric gravitational wave detection – a (quantum-)metrological challenge
9:40	Tjerk Oosterkamp (Leiden University)	Low temperatures and low vibrations: towards superposition and milli-gravity
10:20	Coffee Break	
10:50	Jack Sankey (McGill University)	An optically defined phononic crystal defect
11:30	Natanael Bort-Soldevila, Jaume Cunill-Subiranas (UAB Barcelona)	Tuning Levitation Frequencies by Shaping Magnetic Field Traps and Particle Geometry
12:00	Break	
16:00	Coffee & Snack Break	
16:45	Sofia Qvarfort (Stockholm University & Nordita)	Sensing force gradients with cavity optomechanics
17:25	Matthijs De Jong (Aalto University)	Casimir force between superconductors
17:55	Andrei Militaru (ISTA)	Motional entanglement of remote optically levitated nanoparticles
18:15	Break	
18:45	Dinner	
20:35	Poster session	

Wednesday 5 February 2025

Time	Name	Title
7:00	Breakfast	
9:00	Eva Weig (Technical University of Munich)	High intrinsic quality factors with SiC nanomechanical resonators
9:40	Lukas Novotny (ETH Zürich)	Translations, Librations, Rotations and Vibrations of Levitated Nanoparticles
10:20	Coffee Break	
10:50	Ania Bleszynski-Jayich (UCSB)	Spin-coupled diamond mechanical systems
11:30	Jannek Hansen, Remi Claessen (IQOQI Vienna)	High-precision motional readout of levitated superconductors
12:00	Break	
16:00	Coffee & Snack Break	
16:45	Konrad Lehnert (JILA)	Quantum transduction between the microwave and optical domains
17:25	Fabian Resare, Achintya Paradkar (Chalmers)	Chip-based levitation of superconducting microparticles at mK temperatures
17:55	Short break	
18:05	Matthew Herbst (Aalto University)	Detecting Gravity at the Milligram Scale Using Optomechanics
18:25	Break	
18:45	Dinner	

Thursday 6 February 2025

Time	Name	Title
7:00	Breakfast	
9:00	John Teufel (NIST Boulder)	Quantum Circuit Optomechanics with Millimeter Wave Photons
9:40	Mathieu Juan (University of Sherbrooke)	Leveraging magneto-mechanics for clamped and levitated mechanics
10:10	Coffee Break	
10:40	Amir Safavi-Naeini (Stanford University)	Understanding and improving coherence in Lithium Niobate Mechanical Oscillators
11:20	Shivangi Dhiman, Nicolas Diaz Naufal (KIT)	Backaction effects in nonlinear electromechanics
11:50	Break	
16:00	Coffee & Snack Break	
16:45	Marco Scigliuzzo (EPFL)	Ultra coherent circuit optomechanics: From watching decoherence of a squeezed mechanical oscillator to collective ground state cooling
17:25	Korbinian Rubenbauer, Hans Huebl (WMI Garching)	Prospects of inductively coupled cavity-optomechanics
17:55	Short break	
18:05	Jack Harris (Yale)	New results on magnetically levitated drops of superfluid helium
18:45	Conference Dinner	

Friday 7 February 2025

Time	Name	Title
7:00	Breakfast	
9:00	Yiwen Chu (ETH Zürich)	A mechanical qubit
9:40	Andrea Vinante (CNR)	Ultrafast spinning of a levitated micromagnet
10:00	Nadine Meyer (ETH Zürich)	Vacuum levitation and motion control on chip
10:20	Coffee Break	
10:50	Philipp Treutlein (University of Basel)	Light-mediated interactions in atomic and optomechanical systems
12:00	Lunch	
13:00	Bus to IBK	



Funded by
the European Union

Horizon Europe 2021-2027 Framework Programme Grant Agreement number 101080143. Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. The European Union cannot be held responsible for them.