



QFS2021 International Online Conference

Centre for Nano Science and Engineering (CeNSE),
Indian Institute of Science (IISc), Bangalore, India
Dates: 10-14 and 16-19 August 2021



Wednesday, 11 August 2021, 04:30PM - 05:30PM IST, 07:45PM - 08:30PM IST	
Poster session for Group A	
Konstantin Nemchenko	Specular and Diffusive Scattering Influence on the Thermal Conductivity of Nanoribbons
Sergey Nemirovskii	Thermodynamically equilibrium quantum vortices in counterflowing superfluids. The structure of vortex tangle and the relation with quantum turbulence.
Izumi Iwasa	Amplitude-dependent ultrasound propagation in solid ^4He
Jun Usami	Superfluidity Found in the Possible Liquid Crystal Phase of 2D ^4He
Subhendu De	Penning Electron Spectra of Camphor Molecules Embedded in Helium Nanodroplets by EUV Photoexcitation
Mehdi Zarea	Theory of the anomalous frequency shift of superconducting Nb cavities
Dubovskii Leonid	New Type of Macroscopic Quantum Nucleation Experiment in Overpressurized Superfluid Helium
Jere Mäkinen	Suppressing the Kibble-Zurek mechanism by a symmetry-violating bias
David Schmoranz	Vortex Line Density in Turbulence due to Oscillators in Superfluid ^4He
Bilal Tanatar	Rotons and Bose-Einstein condensation in Rydberg-dressed gases
Xin Wen	Imaging Fluorescence of He_2^* Excimers Created by Neutron Capture in Liquid He II—a New Approach for Turbulent Flow Research
Manuel Arrayás	A levitation experiment in superfluid ^3He : design process.
Ilya Polishchuk	Bose-Einstein Condensation and Ferromagnetism of Low Density Bose gas of Particles with Arbitrary Spin
Tomo Nakagawa	Self-similar Structure of Localized Quantum Turbulence in Superfluid ^4He
Marvin Hirschel	Listening to the Sound of Dark Matter with Superfluid Helium
Leandra Vranjes Markic	Superfluidity and condensate properties of trapped Bose-Bose mixtures
Haruya Kokubo	Phase diagram of pattern formation in binary Bose-Einstein condensates with shear flow
Shiia Shimamura	Circulation of suction vortex in superfluid helium
Shion Yamashika	Stability of super currents in a superfluid phase of spin-1 bosons in an optical lattice
Dillip Kumar Pradhan	Trapping Multielectron Bubbles Using a Point Paul Trap



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Thursday, 12 August 2021, 04:30PM - 05:30PM IST, 07:45PM - 08:30PM IST	
Poster session for Group B	
Taira Kawamura	Realization of unconventional Fermi superfluids through Fermi-surface reservoir-engineering
Yuan Tang	Comparison of the second-order statistics in ultra-quantum turbulence and quasi classical turbulence in He II
S.N.Burmistrov	Transmission of crystallization waves across the edge between the rough and faceted crystalline surfaces at the superfluid-solid ^4He interface
Joe Kitzman	Vantablack Shielding of Superconducting Qubit Systems
Yiming Xing	Electrons Produced in Superfluid Helium by Alpha Particles
Junko Taniguchi	Measurements of superflow of ^4He through an oriented porous membrane
Shan Zou	On dynamical ordering in a 2D electron crystal confined in a narrow channel geometry
Weijun Zeng	Electrical low-frequency $1/f^\gamma$ noise as a tool for studies of Ne on freely suspended graphene
Masaru Suzuki	Effects of ^3He impurities on the mass decoupling of ^4He films - lifetime of the metastable state -
Ruslan Batulin	Nonlinear transport properties of electron on helium through microchannels with different geometries: New lab in Kazan
Priya Sharma	Heat Transport in Superfluid ^3He in Anisotropic Aerogel
Sumit Kumar	Microwave optomechanical measurement of non-metalized SiN strings below
Francis C Bettsworth	Chasing Microkelvin Electron Temperatures in Nanoelectronics
Weican Yang	Quantum Turbulence in Holographic Model: Vortex Statistics and Inverse Cascade
Matt Rudd	Strong coupling corrections to hard domain walls in superfluid ^3He -B
Vaisakh Vadakkumbatt	Superfluid helium based GW detector prototype
Atsuki Kumashita	Pyrolytic graphite for synchrotron X-ray diffraction of two-dimensional helium films
Asher Jennings	Towards Low Frequency Nano-mechanical Resonators in Superfluid Helium
Koki Manabe	Strong-coupling effects on thermodynamic properties of a normal Bose-Fermi mixture with a tunable hetero-pairing interaction
Yusuke Masaki	Vortices and non-Abelian anyons in $^3\text{P}_2$ nematic superfluids



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Friday, 13 August 2021, 04:30PM - 05:30PM IST, 07:45PM - 08:30PM IST	
Poster session for Group C	
Nadiia Herashchenko	Influence of dissipative diffusion mode to the resonances of second sound generated by oscillating quartz tuning forks in superfluid helium
Sosuke Inui	Development of Vortex Bundle Structure in Bathtub Vortex in Superfluid ^4He
Kenta Asakawa	Equilibrium State of Bose-Einstein Condensates Formed by Dark Matter
Krešimir Dželalija	Quantum Monte Carlo study of strongly interacting bosonic one-dimensional systems in periodic potentials
Andrew Fefferman	A 3 n Ω superconducting aluminum heat switch
Grytsenko Ivan	Optimization of a cryogenic LC-tank circuit for detection of the Rydberg state of electrons on helium
Andrei Golov	Modeling of the interaction of a vortex line with a solid wall in the T=0 limit
Hyunjin Choi	Nanomechanics as a New Thermometer for Superfluid Thin Film
Yosuke Minowa	Optical trapping of dielectric nanoparticles in superfluid helium
Shan Zou	Detection of Rydberg states of electrons on liquid helium confined in microchannel devices
Alex Shook	Counting ^3He Remnant Vortices Via Fourth Sound Dissipation
Robyn Learn	Precision Measurements of the Zero Temperature Density of Liquid ^4He using 3D Superconducting Microwave Cavities
Vladimir Tsymbalenko	Dynamics of the fall of a quantum ^4He crystal in superfluid liquid
Ken Obara	Vortex line density of superfluid suction vortex
Ryuji Nomura	Inchworm Driving of ^4He Crystals
Yuliia Horbatenko	Low-temperature heat capacity peculiarities of some molecular crystals
Kyo Yoshida	Energy and particle cascades in Gross-Pitaevskii turbulence
Airi Kaneko	Tuning fork measurements of ^4He confined in an oriented porous membrane
Alexey Yudin	Vibrating Wire with Nematic Aerogel in Superfluid ^3He
Janne Ahokas	A Large Octupole Magnetic Trap for Research with Atomic Hydrogen



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Monday, 16 August 2021, 04:30PM - 05:30PM IST, 07:45PM - 08:30PM IST	
Poster session for Group D1	
Yuto Sano	Emergent isotropy in a matter-wave turbulent cascade
Petar Stipanovic	Few-body universality which extends from classical to quantum systems
Eckhard Krotscheck	Dynamics of ^3He : Spin- and density fluctuations and the spectrum of single particle excitations.
Niyaz Beysengulov	Helium surface fluctuations investigated with superconducting coplanar waveguide resonators
Marcel Človečko	Novel temperature calibration of resistive thermometers in high magnetic fields and at temperatures below 1 K using quartz tuning forks
Tomoyuki Tani	4D XY Quantum Criticality of Superfluid ^4He confined in Gelsil Glass
Sanket Sen	Charge Transfer Ionisation of Camphor Molecule Doped in Helium Nanodroplets by EUV and Soft X-ray Photons
Patrik Švančara	Particle-vortex interactions in thermal counterflow of He II
Ryo Toda	Development of a Superconducting Zinc Heat Switch for the Continuous Nuclear Demagnetization Refrigerator
Taku Matsushita	Indication of Dimer Bound State in ^3He Film Adsorbed in 3D Nanopore
Lawence Chan	Motion of trapped electrons along vortex lines in superfluid ^4He
Daichi Kagamihara	Ratio of shear viscosity to entropy density in a superfluid Fermi gas
Adrian Del Maestro	A Hard-Core Bose-Hubbard Platform in the Solid-State: Helium on Graphene
Bilal Tanatar	Signatures of droplet crystallization in Rydberg-dressed Fermi gases
Sosuke Inui	Two-fluid Coupling Quantum Turbulence Simulation: Vortex Filament Model and Lattice Boltzmann Method
Kitak Kim	The Angular dependent Wigner solid transport on ^3He Stripe phase
Keegan Gunther	Noise Statistics of a Microelectromechanical Oscillator in the Presence of Quantum Turbulence
Arkady Soldatov	Sensing extremely small amounts of surface solid ^3He at ultra low temperatures
Jun Tokimoto	Josephson Oscillation and Self-Trapping in a Fermi Superfluid Gas across the BCS-BEC Crossover
Neda Shamim	Hydrodynamics of Multielectron Bubbles (MEBs) in Liquid Helium (LHe)



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Poster session for Group D2	
Anton Vorontsov	Magnetic scattering of quasiparticles and T_c suppression in geometrically-confined superfluid ^3He
Zhuolin Xie	Fabrication of micro-sized Si vibrating wires
Timour Ichmoukhamedov	Path-integral description of bosons with memory
Yunhu Huang	Spherical Thermal Counterflow of Helium-II
Kyle Castoria	Kelvin Probe Measurements of High Density Electrons on a Thin Film of Helium
Egor Nemchenko	Longitudinal and transverse phonon inelastic transition from solids to superfluid helium



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Tuesday, 17 August 2021, 04:30PM - 05:30PM IST, 07:45PM - 08:30PM IST	
Poster session for Group E	
Timo Kamppinen	Excitations of the quantum fluid ^4He probed with NEMS resonators
Yuma Watanabe	Dark solitons of ultracold bosons in optical lattices
Stephen Lyon	^3He -Based Quantum Sensing of Phonons for Dark Matter Detection
Johnny Adams	Dynamics of ^3He in ^4He plated MCM-41 below the Fermi degeneracy temperature
Robert C. Regan	Half-Quantum Vortices in Nematic and Chiral Phases of ^3He
Shohei Takimoto	Construction of Continuous Magnetic Cooling Apparatus with Zinc Soldered PrNi_5 Nuclear Stages
Hideo Yano	Vortex Emission from Superfluid ^4He Turbulence Produced in a Thin Channel by Thermal Counterflow
Man Nguyen	Aerogel Structure and Its Affect on the Orbital Angular Momentum in Superfluid ^3He
Suddhasattwa Mandal	Ionic motion of photofragments in EUV excited doped He nanodroplets
Tomoki Minoguchi	Floating Solid Phase Revisited for Adsorbed Layers of Helium
Sebastian Spence	Superfluid Optomechanics With Phononic Nanostructures
Hikaru Ueki	Ultrahigh-Q Niobium cavities for quantum processors and detectors
Viktor Cikojevic	Dynamics of equilibration and collisions in ultradilute quantum droplets
Luca Galantucci	Friction-Enhanced lifetime of bundled quantum vortices
Yoma Miyakoda	Emission of Vortex Rings from Thermal Counterflow Turbulence in Superfluid Helium4
Emiko Arahata	Simulation method for evaporative cooling of trapped Bose gases at finite temperatures
Naoto Sakaki	Statistics of Lagrangian Trajectories' Curvature in Thermal Counterflow
Pranaya Kishore Rath	Surface Oscillation Modes of MEBs in Liquid Helium Trapped on a Metal Substrate
Neha Yadav	Bubbles in Superfluid Helium Containing Six and Eight Electrons: Soft, Quantum Nanomaterial
Joshua Hay	Visualizing Vortices in He-II in the Zero Temperature Limit



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Wednesday, 18 August 2021, 04:30PM - 05:30PM IST, 07:45PM - 08:30PM IST	
Poster session for Group F	
Vladimir Tsymbalenko	Observation of the "Burst-Like Growth" Mode on ^4He Crystals Nucleated in a Metastable Liquid
Sanjay Shukla	Heavy Inertial particles in counterflow superfluid turbulence
Wei-Ting Lin	Pairing Fluctuation Corrections to the Kinetic Theory for Liquid ^3He
Gamu Asaka	Plug of Quantum Turbulence in Counterflow
Shunpei Iwasaki	Odd-frequency pairing in a strongly interacting Fermi gas
Takeshi Mizushima	Pair-Density-Wave Fluctuation and Crystallization in Confined Superfluid ^3He
Šimon Midlik	Transition to quantum turbulence in oscillatory thermal counterflow of ^4He
Akira Yamaguchi	Structural study of adsorbed helium films: New approach with synchrotron radiation X-rays
Kazuhiro Tamura	Analysis of shape change of droplet in dipolar Bose-Hubbard model
John Scott	Recovery Dynamics in the Superfluid Glass Phase of ^3He -A
Min Park	Time-resolved measurement of single vortex vanishing in polariton system
Camryn Undershute	Exploring the 3D-to-2D crossover of superfluid ^4He
Masashi Morishita	Heat Capacity of Very Dilute ^3He - ^4He Mixture Films on Graphite
Jason He	New Phases and Angular Momentum of Rotating Chiral p-Wave Superfluids Confined in an Annulus
Junsik Han	Annihilation and recurrence of vortex-antivortex pairs in two-component Bose-Einstein condensates
Hiromitsu Takeuchi	Vortex-core structure in the polar phase of spin-1 Bose-Einstein condensates
Ayanesh Maiti	Focusing acoustic waves with no curvature
Lizhu Chen	Statistical property of Lagrangian trajectory of small particles in super fluid He_4
Pranaya Kishore Rath	Development of the electrohydrodynamic instability of charged liquid helium surface