

WORKSHOP

Strongly-correlated phenomena in ultracold gases: from superfluids and supersolids to ferromagnetic states of matter

20-22 September 2023, Warsaw

[CZiITT Bldg. of Warsaw University of Technology, room 3.07](#)

INFORMATION

1. We have meetings from 10am to 17pm. Catering (coffee, biscuits, lunch, ...) will be at your disposal all the time.
2. There are two main sessions each day (before and after lunch). In addition, we provide extra time for additional talks or discussions that are not included in the program, if you have any scientific problem / working progress results, etc. and you would like to discuss it with other participants.
3. We expect that a short talk will **take 30 min** and long talks (with **hours in boldface**) **take 40 mins** including questions.

PROGRAM

Talks	When
QUANTUM DROPLETS: (chair: Piotr Magierski) 11.00 – 11.10 Piotr Magierski, <i>opening</i> 11.10 – 11.50 Paweł Zin, “ <i>Quantum droplets beyond local density approximation</i> ” 11.50 – 12.10 coffee break 12.10 – 12.50 Krzysztof Pawłowski, “ <i>Quantum droplets and soliton in the strongly interacting Bose gas</i> ”	20.09 (Wed.) 11-13
LUNCH	13-14
ULTRACOLD FERMIONS – I: (chair: Pierbiaggio Pieri) 14.00 – 14.40 Gediminas Juzeliunas, “ <i>Sub-wavelength optical lattices</i> ” 14.40 – 15.00 coffee break 15.00 – 15.40 Giacomo Roati, “ <i>Josephson Junction and order parameter across the BEC-BCS crossover</i> ” 15.40 – 16.00 coffee break 16.00 – 16.40 Luca Tanzi, “ <i>Exploring the supersolid phase of matter with dipolar quantum gases</i> ”	14-17

ONLINE SESSION: (chair: Giacomo Roati) 10.00 – 10.40 Nikolaos Proukakis (<i>online</i>), “Non-equilibrium thermal effects on vortices and mixtures” 10.40 – 10.50 short coffee break 10.50 – 11.30 Diego Hernandez (<i>online</i>), “Kelvin-Helmholtz instability in fermionic superfluids” 11.30 – 12.10 (*)Matteo Zaccanti (<i>online</i>), “Resonantly interacting lithium chromium Fermi mixtures: a possible new platform for exotic superfluidity” 12.10 – 12.20 short coffee break 12.20 – 13.00 Nicola Grani, “Dissipative vortex dynamics in homogeneous Fermi superfluids”	21.09 (Thu.) 10-13
LUNCH	13-14
FFLO, SUPERSOLIDS: (chair: Mariusz Gajda) 14.00 – 14.40 Pierbiagio Pieri, “FFLO correlations in polarized Fermi gases” 14.40 – 15.00 coffee break 15.00 – 15.40 Pawel Jakubczyk, “How relevant are fluctuations for the stability of long-range ordered phases? Role of the Lifshitz points.” 15.40 – 16.00 coffee break 16.00 – 16.40 Mirosław Brewczyk, “Supersolidity of dipolar Bose-Einstein condensates induced by coupling to fermions”	14-17
ULTRACOLD FERMIONS – II: (chair:) 10.00 – 10.40 Tomasz Sowiński, “On the observability of the FFLO phase in systems of several fermions” 10.40 – 11.00 coffee break 11.00 – 11.40 Klejdja Xhani, “Stabilizing persistent currents in an atomtronic Josephson junction necklace” 11.40 – 12.10 Bugra Tuzemen, “Disordered structures in spin-imbalanced Fermi gas” 12.10 – 12.40 Andrea Barresi, “Dissipative dynamics of quantum vortices in polarized fermionic superfluids”	22.09 (Fri.) 10-13
LUNCH	13-14
14.00 – 15.00 goodbye coffee and discussions	14-17

*– to be confirmed