WORKSHOPS: Nonequilibrium phenomena in superfluid systems

27-29 March 2023, Warsaw

CZIiTT Bldg. of Warsaw University of Technology, room 4.07

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 slots (16-17) 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, do not hesitate to use *ad-hoc talks* option.
3. For each session, we reserve the *extra time.* It will be used for discussions, short coffee breaks, etc (depending on our needs).
4. **Talks**
    a. We expect that each talk will take **~30 min** (except one related to the experiment).
    We would like to keep meeting in the form of "informal workshops"; thus there are no strict time slots for each speaker.
    b. We will allow for asking questions or having discussions already during the talks. A standard round of questions after the talk is also envisioned.
    c. We encourage speakers to include in their talks slides that point to some problem (physical / technical / …) to stimulate discussions during the workshops.

PROGRAM

Thematic block	Who	When
Superfluidity in self-bound systems	Krzysztof Pomorski*: Impact of pairing interaction on fission dynamics of U isotopes* Krzysztof Pawłowski: *Dipolar condensate and quantum Bose droplet* Mariusz Gajda*: Manifestation of relative phase in dynamics of two interacting Bose-Bose droplets* Daniel Pęcak*: Dissipation in a neutron star's crust: superflow meets a nucleus* Andrzej Makowski*: Pairing dynamics in nuclear reactions* *5x30min = 2h30min, 30min - extra time (discussions, coffee break)*	**27.03 (Mon.)** 10-13
	LUNCH	13-14
Exotic structures in superfluids	Piotr Magierski: *Spin-polarized vortices with reversed circulation* Nikolai Shchechilin*: Nuclear pastas in neutron stars: Extended Thomas-Fermi plus Strutinsky Integral method*	14-16

	Bugra Tuzemen: *Disordered structures in ultracold spin-imbalanced Fermi gas* *3x30min=1h30min, 30min - extra time (discussions, coffee break)*	
	Discussions, ad-hoc talks, etc (if needed)	till 17
Topological defects in superfluids	Giacomo Roati: *Engineering vortex matter in strongly interacting Fermi superfluids (~40min)* Piotr Surówka: *Dual, gauge theory formulation of topological defect dynamics in systems with spontaneous symmetry breaking* Jakub Kopyciński*: Ultrawide dark solitons in a dipolar Bose gas with strong contact interactions* Andrea Barresi: *Dissipative dynamics of quantum vortices in fermionic superfluid* Bryn Haskell: *Pinned turbulent superfluids and pulsar glitches* *40min+4x30min=2h40min; 20min - extra time (discussions, coffee break)*	**28.03 (Tue.)** 10-13
	LUNCH	13-14
Out-of-equilibrium dynamics	Tadeusz Domański: *Dynamical quantum phase transition of superconducting nanostructures* Piotr Deuar*: On the survival of the quantum depletion of a condensate after release from the trap* Valentin Allard*: Gapless superfluidity in neutron stars* *3x30min=1h30min, 30min - extra time (discussions, coffee break)*	14-16
	Discussions, ad-hoc talks, etc (if needed)	till 17
Phase transitions, thermal properties and suppression of pairing correlations I	Krzysztof Sacha: *From Mott insulator-superfluid transition in the time domain to 6D time-space crystalline structures and more* Armen Sedrakian: *Imbalanced superfluids* Nicolas Chamel*: Suppression of superfluidity in neutron-star crust* King Lun Ng*: Fate of the false vacuum in 1D Bose gases: Simulating the early universe* *4x30min=2h30min, 60min - extra time (discussions, coffee break)*	**29.03 (Wed.)** 10-13
	LUNCH	13-14
Phase transitions, thermal properties and suppression of pairing correlations II	Maciej Maśka: *Temperature-driven BCS-BEC crossover and Cooper-paired metallic phase in coupled boson-fermion systems* Maciej Kruk: *Thermal properties of quantum droplets* Marek Tylutki*: Mixtures of Superfluid Quantum Gases* *3x30min=1h30min, 30min - extra time (discussions, coffee break)*	14-16
	Discussions, ad-hoc talks, etc (if needed)	till 17

Last modification: 27-03-2023