

Summer School on Modern Quantum Technologies 2018

Program

	Mon 10/Sep 18	Tue 11/Sep 18	Wed 12/Sep 18	Thu 13/Sep 18	Fri 14/Sep 18
8:40-9:00	Opening				
9:00-10:45	Vogel	Hage	Shevchenko	Szameit	Zolotaryuk
10:45-11:00	Coffee break				
11:00-12:00	Gusynin	Kordyuk	Scheel	Scheel	Shevchenko
12:00-13:00				Szameit	
13:00-14:30	Lunch				
14:30-15:30	Vogel	Hage	Excursion	Exercises	Zolotaryuk
15:30-15:45	Coffee break			Coffee break	
15:45-16:45	Gusynin	Kordyuk		Poster session	Exercises
16:45-17:00	Coffee break				Coffee break
17:00-17:45	Exercises	Exercises			Closing lecture
17:45-18:35	Welcome BBQ	Exercises			
18:35-21:00					

Main Topics

	Quantum optics
	Physics of graphene
	Superconductors and Josephson junctions
	Quantum computing

List of lectures

Prof. Dr. Werner Vogel	Measurement theory in quantum optics
Prof. Dr. Sc. Valery Gusynin	Graphene and quantum electrodynamics in 2+1 dimensions
Prof. Dr. Stefan Scheel	Quantum theory of light in dielectrics — from linear optics to boson sampling
Prof. Dr. Sc. Alexander Kordyuk	Introduction to superconductivity / Electronic band structure and high temperature superconductivity
Prof. Dr. Boris Hage	Squeezed light generation and application
Prof. Dr. Alexander Szameit	Classical and quantum optics in waveguide arrays
Prof. Dr. Sc. Sergey Shevchenko	Quantum computation from the physicists viewpoint
Dr. Sc. Yaroslav Zolotaryuk	Nonlinear wave phenomena in Josephson junctions