

Condensates of Light

810. WE-Heraeus-Seminar

12 – 16 May 2024

at the Physikzentrum Bad Honnef, Germany

**WILHELM UND ELSE
HERAEUS-STIFTUNG**



Program

Sunday, 12 May 2024

17:00 – 21:00 Registration

18:00 *BUFFET SUPPER and informal get-together*

Monday, 13 May 2024

08:00 *BREAKFAST*

09:00 Scientific organizers **Welcome words**

09:10 – 10:10 Jan Klaers **From BEC to complex condensation
phenomena in two-dimensional photon
gases**

10:10 – 10:55 Quentin Fontaine **Exploring universal scaling laws in two-
dimensional polariton condensates**

10:55 – 11:25 *COFFEE & TEA*

11:25 – 12:10 Päivi Törmä **Quantum geometric tensor in
plasmonic lattices**

12:10 – 12:55 Jean-Jacques Greffet **Photon Bose-Einstein condensation and
lasing in semiconductor cavities**

13:00 *LUNCH*

Program

Monday, 13 May 2024

15:00 – 15:20	Ivan Amelio	Lasing in non-Hermitian flat bands: quantum geometry, coherence, and the fate of Kardar-Parisi-Zhang physics
15:20 – 15:40	Sven Enns	Polarization of photon Bose Einstein condensates
15:40 – 16:15	Poster flashes	
16:15 – 16:35	<i>COFFEE & TEA</i>	
16:35 – 18:30	Posters	
18:30	<i>DINNER</i>	
20:30	Posters (continued)	

Program

Tuesday, 14 May 2024

08:00 *BREAKFAST*

09:00 – 10:00 Hui Deng **Different phases of exciton-polariton condensates**

10:00 – 10:45 Quentin Glorieux **All-optical control of a quantum fluid of light in hot atomic vapor**

10:45 – 11:15 *COFFEE & TEA*

11:15 – 12:00 Rupert Oulton **Photon thermalization and condensation in a quantum well open microcavity**

12:00 – 12:45 Maciej Pieczarka **Thermalization and Bose-Einstein condensation of a photon gas in a VCSEL**

12:45 *LUNCH*

14:00 **Excursion**

18:30 *HERAEUS DINNER*
(social event with cold & warm buffet with complimentary drinks)

Program

Wednesday, 15 May 2024

08:00	<i>BREAKFAST</i>	
09:00 – 10:00	Demetri Christodoulides	Optical thermodynamics of nonlinear highly multimode systems
10:00 – 10:45	Julian Schmitt	Compressibility and equation of state in an optical quantum gas
10:45 – 11:15	<i>COFFEE & TEA</i>	
11:15 – 12:00	Peter Littlewood	Non-Hermitian phase transitions in polariton condensates
12:00 – 12:45	David Snoke	Phase correlation and flow of long-lifetime polariton condensates
12:45	<i>LUNCH</i>	
15:00 – 15:20	Dimitrios Trypogeorgos	Evidence for supersolidity in a polaritonic bound-in-the-continuum state
15:20 – 15:40	Christian G. Mayer	Time-resolved propagation measurement of exciton-polariton condensates in a kagome edge mode
15:40 – 16:00	Paolo Comaron	Coherent properties of a non-equilibrium polariton condensate across interaction regimes
16:00 – 16:30	<i>COFFEE & TEA</i>	
16:30 – 17:15	Rainer Mahrt	Progress toward integrated all-optical polariton logic
17:15 – 18:00	Said Rodriguez	Arcsine laws and weak ergodicity breaking of light
18:30	<i>DINNER</i>	

Program

Thursday, 15 May 2024

08:00	<i>BREAKFAST</i>	
09:00 – 09:45	Jacek Szczytko	Engineering spin-orbit coupling of light in weak and strong coupling regimes
09:45 – 10:30	Mercedeh Khajavikhan	Thermalization of modes in photonic nonlinear systems
10:30 – 11:00	<i>COFFEE & TEA</i>	
11:00 – 11:45	Sebastian Diehl	Universality of time crystalline order
11:45 – 12:30	Peter Kirton	PT symmetry breaking in open quantum systems
12:30 – 13:00	Scientific organizers	Conclusions
13:00	<i>LUNCH</i>	

End of the seminar and departure /Lab visits at Bonn University

NO DINNER for participants leaving on Friday; however, a self-service breakfast will be provided on Friday morning