

Sensing with Quantum Light

790. WE-Heraeus-Seminar

05 - 07 June 2023

at the Physikzentrum Bad Honnef, Germany

**WILHELM UND ELSE
HERAEUS-STIFTUNG**



Program

Sunday, 04 June 2023

16:00 – 21:00 Registration

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

Monday, 05 June 2023

08:00 *BREAKFAST*

09:00 Scientific organizers **Welcome and Infos**

09:05 – 09:40 Jeff Ou **Interference by direct amplitude addition**

09:40– 10 :15 John Rarity **Quantum remote sensing**

10:15 – 10:50 Roman Schnabel **Quantum dense sensing of trajectories**

10:50 – 11:20 *COFFEE BREAK*

11:20 – 11:55 Ulrik Andersen **Quantum sensing with squeezed light**

11:55 – 12:30 Nicolas Treps **Separation estimation of incoherent optical sources reaching the Cramér-Rao bound**

12:30 – 12:40 *CONFERENCE PHOTO*

12:40 – 14:00 *LUNCH*

Program

Monday, 05 June 2023

14:00 – 14:35	Rob Thew	Entangled two photon absorption
14:35 – 15:10	Dan Oron	Studying multicarrier interactions in semiconductor nanocrystals using heralded spectroscopy
15:10 - 15:30	Zhedong Zhang	Monitoring electronic coherence of molecules by quantum-light spectroscopy
15:30 – 15:40	<i>Announcement SQL24: 27.-31.10.2024</i>	
15:40 – 16:15	<i>COFFEE BREAK</i>	
16:15 – 17:15	<i>Poster Flash 1</i>	
17:15 – 18:45	<i>Poster Session 1</i>	
18:45	<i>DINNER</i>	
19:30 – 22.00	<i>Discussions</i>	

Program

Tuesday, 06 June 2023

08:00	<i>BREAKFAST</i>	
09 :00 – 09 :35	Frank Schlawin	Quantum-enhanced spectroscopy in nonlinear interferometers
09:35 – 10:10	Kazuki Hashimoto	Quantum light sources and nonlinear interferometers for molecular spectroscopy
10:10 – 10:45	Anna Paterova	Broadband quantum spectroscopy at the mid-infrared region
10:45 – 11:20	<i>COFFEE BREAK</i>	
11 :20 – 11 :55	Edoardo Charbon	Large-format single-photon image sensors for quantum imaging
11:55 – 12:30	Federica Villa	24×24-pixels SPAD camera for quantum imaging at low optical power
12:30 – 14:00	<i>LUNCH</i>	
14:00 – 14:35	Milena D'Angelo	Fast and high resolution 3D imaging through correlated photons
14:35 – 15:10	Marta Gilaberte Basset	Image resolution of quantum imaging with undetected photons via position correlations
15:10 – 15:45	Daniele Faccio	Hong Ou Mandel microscopy and fluorescence lifetime quantum imaging
15:45 – 16:15	<i>COFFEE BREAK</i>	
16:15 – 17:15	Poster Flash 2	
17:15 – 18:45	Poster Session 2	
18:45	<i>HERAEUS DINNER</i> <i>(social event with cold & warm buffet with complimentary drinks)</i>	

Program

Wednesday, 07 June 2023

08:00	<i>BREAKFAST</i>	
09:00	Awarding Poster Prizes	
09:10 – 09:45	William Plick	Versatile super-sensitive metrology using induced coherence
09:45 – 10:20	Amr Helmy	Enhancement in LiDAR SNR using non-classical light
10:20 – 10:55	Robert Fickler	Spatial Mode N00N States and the Quantum Gouy Phase
10:55 – 11:25	<i>COFFEE BREAK</i>	
11:25 – 12:00	Zheshen Zhang	Entanglement-enhanced sensing and data processing
12:00- 12:35	Paul David Lett	Creation of large-scale entangled states for exploring sensing networks
12:35- 12:40	Closing remarks	
12:40 – 14:00	<i>LUNCH</i>	

End of the seminar and departure

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