Quantum Sensors, Devices and Materials

Baltic-German WE-Heraeus-Seminar

15 - 18 March 2026

at the Physikzentrum Bad Honnef, Germany

WILHELM UND ELSE
HERAEUS-STIFTUNG

Program

Sunday, 15 March 2026

17:00 - 21:00	Registration	
18:15 - 19:45	*BUFFET SUPPER and informal get-together*	
19:45 - 20:00	**Greetings from organizers**	
20:00 - 20:45	Florian Gahbauer	**Another kind of cryogenics: physics in Antarctica**

Program

Monday, 16 March 2026

07:30 - 08:45	*BREAKFAST*	
08:45 - 09:30	Chris Bauerle	**Fundamental science & quantum technology using flying electrons**
09:30 - 10:15	Andrey Surzhykov	**Atomic magnetometry with vector light**
10:15 - 10:45	*COFFEE BREAK*	
10:45 - 11:30	Ferdinand Kuemmeth	**Superconducting germanium quantum dots**
11:30 - 12:00	Victor Adam	**Coherent Two-Qubit Control in Industrial Si/SiGe Spin Qubits**
12:00 - 12:20	Thomas Gerster	**Quantum Technologies Standardization: Standards as Key to Innovation and Industrial Applications**
12:20 - 12:30	CONFERENCE PHOTO (in front of the main entrance)	
12:30 - 14:00	*LUNCH*	
14:00 - 14:45	Angela Wittmann	**Diamond-based magnetic imaging of topological textures**
14:45 - 15:30	Mathias Kläui *(remote)*	**Topological Spin Structures & Spin-Orbitronics in 2D: from van der Waals systems to multilayers**
15:30 - 16:15	Renata Butkute	**Engineering of A3-B5-Bi quantum structures for NIR microlasers: technological challenges and design strategies**

Program

Monday, 16 March 2026

16:15 - 16:45	*COFFEE BREAK*
16:45 - 18:15	**Poster flash talks (1 presentation = 90 s)**
18:15 - 19:45	*DINNER*
19:45 – 21:00	**Poster session**

Program

Tuesday, 17 March 2026

07:30 - 08:45	*BREAKFAST*	
08:45 - 9:30	Charles Gould	**The QAHE as a zero field resistance standard.**
9:30 - 10:15	Chuan Li	**Gate-tunable Josephson diode effect in topological semimetal**
10:15 - 10:45	*COFFEE BREAK*	
10:45 - 11:00	**About the Wilhelm and Else Heraeus Foundation**	
11:00 - 11:45	Raivo Stern	**Spectroscopy of some quantum materials at low temperatures and high applied magnetic fields.**
11:45 - 12:30	Aivars Vembris	**Single photon sources**
12:30 - 14:00	*LUNCH*	
14:00 - 14:45	Hans Werner Schumacher	**Single Elctron Pumps for the new SI system of units**
14:45 - 15:30	Masaya Kataoka	**Scaling-up single-electron pumps**
15:30 - 15:50	Dustin Wittbrodt	**Spin-Qubit Technology for Single Electron Pumps**
15:50 - 16:10	Girts Barinovs	**Birth, Life, and Death of Bound Electron-Pair States in a Two-Dimensional Electron Gas**
16:10 - 16:45	*COFFEE BREAK*	

Program

Tuesday, 17 March 2026

16:45 - 17:30	Vinante Andrea	**Levitated ferromagnets: experimental progress and fundamental physics prospects**
17:30 - 18:30	Dmitry Budker	**Fundamental Physics on a couch, in the lab, in an Elevator, and in Space**
18:30 - 20:30	*HERAEUS-DINNER*	

Program

Wednesday, 18 March 2026

07:30 - 08:45	*BREAKFAST*	
08:45 - 09:30	Gediminas Juzeliūnas	**Two-dimensional topological sub-wavelength lattices for ultracold atoms**
09:30 - 10:15	Franziska Weickert	**Primary Tesla Standards**
10:15 - 10:45	*COFFEE BREAK*	
10:45 - 11:30	Anne Fabricant	**Batteries as a use case for quantum sensing**
11:30 - 12:15	Vyacheslavs Kashcheyevs	**Ballistic electrons in a chip: electron quantum optics with strong non-linearity**
12:15 - 12:30	**Closing remarks**	
12:30 - 14:00	*LUNCH*	

End of the seminar and departure