Program of WEH Seminar, June 22–26, 2026

New Trends in Degenerate Gases: Quantum Computation and Simulation

Sunday, June 21, 2026

17.00 – 21.00 Registration
18.00 – 21.00 Dinner and informal get-together

Monday, June 22, 2026

08.40 – 09.00 Carlos Sá de Melo (Atlanta, USA):
Opening and Welcome
Session 1: Cavities I
09.00 – 09.45 Georg von Freymann (Hannover, Germany):
3D micro-printed potential landscapes for photonic quantum gases
09.45 – 10.30 Francesco Piazza (Augsburg, Germany):
Laser-Painted Cavity-Mediated Interactions in a Quantum Gas
10.30 – 11.00 Coffee Break
Session 2: Kinetic Magnetism
11.00 – 11.45 Erich Mueller (Ithaca, USA):
The Geometry of Kinetic Magnetism
Session 3: Quantum Computation
11.45 – 12.30 Jens Eisert (Berlin, Germany):
Fault tolerant quantum computing with cold atoms
12.30 – 14.00 Lunch
Session 4: Contributed Talks I
14.00 – 14.30 Ana Hudomal (Belgrade, Serbia):
Ergodicity breaking meets criticality in a gauge-theory quantum simulator
14.30 – 15.00 Lennart Koehn (Glasgow, UK):
Quantum-gas microscopy and Talbot interferometry of the Bose-glass phase
15.00 – 15.30 Laurent Longchambon (Paris, France):
Route to vortex turbulence in a shell trap
15.30 – 16.00 Coffee Break
16.00 – 18.30 **Plenary Poster Flash Presentations**
18.30 – 20.00 Dinner
20.00 – 21.30 **Poster Session I**
Poster numbers 1 mod 4

Tuesday, June 23, 2026

Session 5: **Lattices I**

09.00 – 09.45 Eugene Demler (Zurich, Switzerland): Online via Zoom
Simulating doped Mott insulators on square and triangular lattices

09.45 – 10.30 Christof Weitenberg (Dortmund, Germany):
Phase microscopes for quantum gases: from weakly to strongly correlated regimes

10.30 – 11.00 Coffee Break

11.00 – 11.45 Imke Schneider (Kaiserslautern, Germany):
Tuning Statistics: Multicriticality and Quantum Phases of 1D Lattice Anyons

Session 6: **Quantum Computation, Simulation, and Sensing**

11.45 – 12.30 Hannes Bernien (Innsbruck, Austria):
Quantum processors and quantum networks – Atom-by-atom

12.30 – 12.40 Group Photo

12.40 – 14.00 Lunch

14.00 – 14.45 Monika Aidelsburger (Munich, Germany):
Many-body quantum dynamics in large-scale, programmable neutral-atom quantum simulators

14.45 – 15.30 David Spierings van der Wolk (Boston, USA):
Active and passive control of individual atoms with optical cavities

15.30 – 16.00 Coffee Break

16.00 – 16.45 Monika Schleier-Smith (Stanford, USA):
Decoded quantum sensing with cavity-coupled and dipolar spins

16.45 – 18.15 **Poster Session II**
Poster numbers 2 mod 4

18.30 – 20.00 Dinner

20.00 – 20.15 Video
WEH foundation and its activities

20.15 – 21.00 Carlos Sá de Melo (Atlanta, USA):
In Memoriam: The Legacy of Tony Leggett

Wednesday, June 24, 2026

Session 7:	**Dynamics and Dissipation I**
09.00 – 09.45	Hui Zhai (Beijing, China): Online via Zoom *Quantum thermalization dynamics*
09.45 – 10.30	Oded Zilberberg (Konstanz, Germany): *Topological classification of quantum driven-dissipative systems*
10.30 – 11.00	Coffee Break
Session 8:	**Quantum simulation**
11.00 – 11.45	Zala Lenarčič (Ljubljana, Slovenia): *Neural networks and generalized Gibbs ensembles for simulation of light-matter coupled systems*
11.45 – 12.30	Thierry Giamarchi (Geneva, Switzerland): *Quantum transport in cold atomic gases*
12.30 – 14.00	Lunch
14.00 – 18.30	**Excursion**
18.30 – 20.00	Heraeus Dinner
20.00 – 21.30	**Poster Session III** Poster numbers 3 mod 4

Thursday, June 25, 2026

Session 9:	**Cavities II**
09.00 – 09.45	Jean-Philippe Brantut (Lausanne, Switzerland):
	Cavity-mediated density-waves in correlated Fermi gases
09.45 – 10.30	Ana Maria Rey (Boulder, USA):
	S, P, D . . . BEC . . . Easy as I, II, III: Pairing games in a cavity
10.30 – 11.00	Coffee Break
11.00 – 11.45	Peter Domokos (Budapest, Hungary):
	Collective light scattering from atoms into an optical cavity:
	subradiance and magic frequencies
Session 10:	**Supersolidity**
11.45 – 12.30	Giacomo Valtolina (Berlin, Germany)
	New experiments with dysprosium atoms
	towards cavity-control of dipolar quantum gases
12.30 – 14.00	Lunch
14.00 – 14.45	Manfred Mark (Innsbruck, Austria):
	Quantum simulation with dipolar quantum gases
Session 11	**Contributed Talks II**
14.45 – 15.15	Claudia Politi (Zurich, Switzerland):
	Two-photon cooling of calcium atoms
15.15 – 15.45	Matthias Weidemüller (Heidelberg, Germany):
	Structure and dynamics of the heavy Fermi polaron
15.45 – 16.15	Richard Schmidt (Heidelberg, Germany):
	Cold-atom based quantum simulation of excitons in two-dimensional materials
16.15 – 17.00	Coffee Break
17.00 – 18.30	**Poster Session IV**
	Poster numbers 4 mod 4
18.30 – 20.00	Dinner
20.00 –	Socializing

Friday, June 26, 2026

Session 12	**Dynamics and Dissipation II**
09.00 – 09.45	Chen-Lung Hung (West Lafayette, USA):
	Quench dynamics of interacting Bose gases in low dimensions
09.45 – 10.30	Wei Zhang (Beijing, China):
	f-sum rules for dissipative systems
10.30 – 11.00	Coffee Break
Session 13	**Lattices II**
11.00 – 11.45	Andrea Bergschneider (Bonn, Germany):
	Controlling pair tunneling in Fermi-Hubbard systems
11.45 – 12.30	Takeshi Fukuhara (Wako, Japan): Online via Zoom
	Quantum simulation of frustrated systems with bosonic atoms in triangular optical lattices
12.30 – 12.40	Concluding Remarks
12.40 – 14.00	Lunch
14.00	Departure