Winter School Program

	Monday	Tuesday	Wednesday	Thursday	Friday
8:55		Briefing	Briefing	Briefing	Briefing
9:00	registration & welcome	Lahaye (2)	Cornish (2)	Schauss (3)	Zache (3)
10:00	Perrin (1)	Werner (2)	Zache (2)	Cornish (3)	Zeiher (2)
11:00			Coffee break		
11:30	Werner (1)	Perrin (2)	Schauss(2)	Grusdt (1)	Zeiher (3)
12:30	Ünal (1)	Snow break (free time)	Ünal (2)	Grusdt (2)	Snow break (free time)
13:30	Lunch		Lunch		
15:00	Lahaye (1)		Werner (3)	Ünal (3)	
16:00	Zache (1)		Lahaye (3)	Zeiher (1)	
17:00	Short break		Short break		
17:15	Schauss (1)		Perrin (3)	Grusdt (3)	
18:15	Cornish (1)	Poster session I		Poster session II	Conclusion & poster prizes
19:15	Reception buffet				
20:15					

Lecture Titles

Simon Cornish	Introduction to ultracold molecules	Properties, applications and production Internal state control and trapping molecules Controlling molecular motion and collisions
Fabian Grusdt	Quantum simulation of the doped Hubbard model	Phase diagram of high-temperature superconductors Strong coupling theory Hidden orders
Thierry Lahaye	Quantum simulation of spin models with Rydberg tweezer arrays	Arrays of single atoms in optical tweezers Rydberg atoms and their interactions Quantum many-body physics with Rydberg arrays
Hélène Perrin	Two-dimensional quantum Bose gases	Quasi-long range order in 2D BKT mechanism for superfluidity Scaling symmetry
Peter Schauss	TBD	
Nur Ünal	TBD	
Felix Werner	The resonant Fermi gas	Zero-range limit, three-body problem, and dynamical symmetry Many-body physics: methods and basic properties Two-body and three-body contacts
Torsten Zache	Introduction to quantum simulation of lattice gauge theories	Fundamentals of lattice gauge theories Analog implementations Digital approaches
Johannes Zeiher	Quantum computing and communication with neutral-atom arrays	Gates, circuits, and architectures in neutral-atom quantum computers Surviving in a noisy world: Detecting and correcting errors in quantum computers Towards the "quantum internet": Atom-photon interfaces and building blocks for quantum networks