Solvay Workshop on 'Quantum Simulation' (18 to 20 February 2019)
PROGRAM

VENUE: ULB, Campus de la Plaine, Brussels Building N.O. - 5th Floor - SOLVAY ROOM

MONDAY 18 FEBRUARY

9:00	9:15	Registration
9:15	9:30	Opening by Marc Henneaux
9:30	10:15	Ignacio Cirac: *Quantum optics in structured baths*
10:15	11:00	Benoit Vermersch: *Probing entanglement and scrambling via random measurements*
11:00	**11:20**	**COFFEE BREAK**
11:20	12:05	Rainer Blatt: *Quantum simulation with trapped Ca+ Ions*
12:05	12:50	Christopher Monroe: *Quantum Circuits and Simulation with Individual Atoms*
12:50	**14:35**	**LUNCH**
14:35	15:20	Dam Thanh Son: *Physics of composite fermions in the fractional quantum Hall effect*
15:20	16:05	Duncan Haldane: *Geometry of flux attachment in the FQHE*
16:05	16:50	Steven H. Simon: *Interesting Things about Fractional Quantum Hall Edges*
16:50	**17:10**	**COFFEE BREAK**
17:10	17:55	Nigel R. Cooper: *Topological phases of matter out of equilibrium*
17:55	18:40	Norman Yao: *Non-equilibrium phases of quantum matter*

TUESDAY 19 FEBRUARY

9:15	10:00	Immanuel Bloch: *Probing and Controlling Quantum Matter at the Single Atom Level*
10:00	10:45	Markus Greiner: *A Microscopic View on Quantum Matter: From Fermi-Hubbard Physics to Many-Body Localization*
10:45	**11:05**	**COFFEE BREAK**
11:05	11:50	Mikhael Lukin: *Exploring quantum dynamics with Rydberg atom arrays*
11:50	12:35	Antoine Browaeys: *Many body physics with individual Rydberg atoms*
12:35	12:40	Group Photo
12:40	**14:20**	**LUNCH**
14:20	15:05	Peter Brown: *Probing transport and spectral properties of Fermi-Hubbard systems with a quantum gas microscope*
15:05	15:55	Jean Dalibard: *Scale invariance and breathers in a 2D quantum fluid*

15:55	**16:15**	**COFFEE BREAK**
16:15	17:00	Alexander Szameit: *Non-hermitian topological photonics*
17:00	17:45	Jonathan Simon: *Photonic Matter: From Mott Insulators, Landau Levels, and Floquet Polaritons*
19:45		**CONFERENCE DINNER AT THE PLAZA HOTEL**

WEDNESDAY 20 FEBRUARY

10:00	10:30	**COFFEE**
10:30	11:15	Christine Muschik: *Quantum simulation of problems from high energy physics*
11:15	12:00	Markus Oberthaler: *Universal time dynamics: connection between quark gluon plasma and ultracold gases*
12:00	12:45	Ian B. Spielman: *Topology of the Rashba model (Experiment) and quantum gases with weak measurement and classical feedback (Theory)*
12:45	**14:30**	**LUNCH**
14:30	15:15	Maciej Lewenstein: *Detection of topological order with quantum simulators*
15:15	16:00	Anatoli Polkovnikov: *Quantum simulations of interacting systems using phase space methods*
16:00	**16:20**	**COFFEE BREAK**
16:20	17:05	Lieven Vandersypen: *Simulating magnetism using semiconductor quantum dot arrays*
17:05	17:50	Jacqueline Bloch: *Toward many body physics with light in arrays of semiconductor cavities*
17:50		Concluding remarks