



## SCHEDULE

### Monday, 18 May 2015

Großer Festsaal, 1st floor, University of Vienna, Universitätsring 1, 1010 Vienna

08:45 – 09:00	Opening ceremony
09:00 – 09:45	<b>David Wineland (NIST)</b> Exploring quantum with trapped ions
09:45 – 10:30	<b>Wojciech Zurek (Los Alamos National Laboratories)</b> Quantum Theory of the Classical: Decoherence, Quantum Darwinism, and Objective Reality
10:30 – 11:00	<i>Coffee break</i>
11:00 – 11:45	<b>Nicolas Gisin (University of Geneva)</b> Spins, Magnets, PR-boxes and Weak Measurements
11:45 – 12:30	<b>Philippe Grangier (Institut d'Optique / CNRS)</b> Contexts, Systems and Modalities: a new ontology for quantum mechanics
12:30 – 14:30	<i>Lunch break &amp; posters session I</i>
14:30 – 15:15	<b>Rudolf Grimm (University of Innsbruck &amp; IQOQI Innsbruck)</b> Atom interferometry in a Fermi sea
15:15 – 16:00	<b>Artur Ekert (Oxford University)</b> The ultimate physical limits of privacy for the paranoid ones
16:00 – 16:30	<i>Coffee break</i>
16:30 – 19:30	<b>Lab tours &amp; individual excursions</b>

## Tuesday, 19 May 2015

Großer Festsaal, 1st floor, University of Vienna, Universitätsring 1, 1010 Vienna

09:00 – 09:45	<b>Alain Aspect (Institut d'Optique Graduate School)</b> An atomic Hong-Ou-Mandel experiment
09:45 – 10:30	<b>Ian Walmsley (Oxford University)</b> A la recherche du clair perdu: quantum memories for the real world
10:30 – 11:00	<i>Coffee break</i>
11:00 – 11:45	<b>Mikhail Lukin (Harvard University)</b> New interface between quantum optics and nanoscience
11:45 – 12:30	<b>Rainer Blatt (University of Innsbruck &amp; IQOQI Innsbruck)</b> Quantum Information Science with Trapped Ca <sup>+</sup> Ions
12:30 – 14:30	<i>Lunch break &amp; posters session II</i>
14:30 – 14:50	<b>Andrew White (University of Queensland)</b> Going down drains into blind alleys: from reality to causality in the quantum world
14:50 – 15:10	<b>Samuel Werner (NIST)</b> Neutron Interferometry beyond Newton
15:10 – 15:25	<b>Lauriane Chomaz (University of Innsbruck &amp; IQOQI Innsbruck)</b> Dipolar quantum physics with strongly magnetic atoms
15:25 – 15:40	<b>Magdalena Zych (University of Queensland)</b> Bell Inequalities for Temporal Order of Events
15:40 – 15:55	<b>Ana Predojevic (University of Innsbruck)</b> Quantum effects from quantum dots embedded in photonic nanowires
15:55 – 16:30	<i>Coffee break</i>
16:30 – 16:45	<b>Daqing Wang (MPI for the Science of Light, Erlangen)</b> A sub- $\lambda^3$ -volume cantilever-based Fabry-Pérot resonator for cavity-QED studies
16:45 – 17:00	<b>Georg Heinze (ICFO)</b> Controlled rephasing of single collective spin excitations in a cold atomic ensemble for temporally multiplexed quantum memories
17:00 – 17:15	<b>Kathrin Buczak (VCQ &amp; ATI, TU Vienna)</b> Creation and charge state dynamics of NV centres for quantum applications
17:15 – 17:30	<b>Philipp Haslinger (UC Berkeley)</b> Atom-interferometry constrains on dark energy theories

## Boltzmann Lecture 2015 – Public Talk

Auditorium Maximum, lower ground floor, University of Vienna, Universitätsring 1,

19:30 – 20:30	<i>Reception in the arcades</i>
20:30 – 21:30	<b>Stefan W. Hell</b> <b>(MPI for Biophysical Chemistry, Göttingen &amp; German Cancer Research Center)</b> Optical microscopy: the resolution revolution

## Wednesday, 20 May 2015

Großer Festsaal, 1st floor, Austrian Academy of Sciences (ÖAW),  
Dr. Ignaz Seipel-Platz 2, 1010 Vienna

09:00 – 09:45	<b>Serge Haroche (College de France, Paris)</b> Dipole-dipole interactions in a cold Rydberg atom gas explored by microwave spectroscopy
09:45 – 10:15	<b>Markus Arndt (VCQ &amp; University of Vienna)</b> From Quantum Soccer to Matter-wave physics with Biomolecules and tailored Nanoparticles
10:15 – 10:45	<i>Coffee break</i>
10:45 – 11:15	<b>Alipasha Vaziri (Institute for Molecular Pathology &amp; University of Vienna)</b> Towards a dynamic map of neuronal circuits
11:15 – 11:45	<b>Thomas Jennewein (University of Waterloo)</b> Testing quantum correlations of three entangled photons generated in cascaded parametric down-conversion
11:45 – 14:00	<i>Lunch break &amp; group photo</i>
14:00 – 14:45	<b>Peter Zoller (University of Innsbruck &amp; IQOQI Innsbruck)</b> Quantum Optics of Chiral Networks with Atoms, Photons and Spins
14:45 – 15:30	<b>Charles Bennett (IBM Research Division, New York)</b> Boltzmann's Brain and Wigner's Friend
15:30 – 16:00	<i>Coffee break</i>
16:00 – 16:45	<b>Issachar Unna (Hebrew University of Jerusalem)</b> Einstein's Confrontation With Quantum Mechanics (1922-1927)
16:45 – 17:30	<b>Helmut Rauch (ATI, Vienna University of Technology)</b> Anton: his time as neutron scientist

## Conference dinner

Festsäle, 1st floor, University of Vienna, Universitätsring 1, 1010 Vienna

19:30 – 23:00	<b>Welcome</b> After-Dinner speech by <b>Daniel Greenberger (The City College of New York)</b> <b>Speakers' Corner</b>
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## Thursday, 21 May 2015

Großer Festsaal, 1st floor, University of Vienna, Universitätsring 1, 1010 Vienna

09:00 – 09:25	<b>Markus Aspelmeyer (VCQ &amp; University of Vienna)</b> New Frontiers in Quantum Optomechanics: from levitation to gravitational quantum physics
09:25 – 9:50	<b>Stefan Bernet (Medical University of Innsbruck)</b> Light field control with "thick" spatial light modulators and diffractive optical elements
9:50 – 10:15	<b>Gregor Weihs (University of Innsbruck)</b> Photon Sources and the Foundations of Quantum Mechanics
10:15 – 10:40	<b>Markus Oberthaler (KIP Heidelberg University)</b> Entanglement in mesoscopic atomic systems
10:40 – 11:10	<i>Coffee break</i>
11:10 – 11:35	<b>Hermann Batelaan (University of Nebraska-Lincoln)</b> Controlled double slit electron diffraction
11:35 – 12:00	<b>Philip Walther (VCQ &amp; University of Vienna)</b> Photonic Quantum Computation and Quantum Simulation
12:00 – 12:25	<b>Jörg Schmiedmayer (VCQ &amp; ATI &amp; TU Vienna)</b> Does an isolated many body quantum system relax?
12:25 – 12:50	<b>Gabriel Molina-Terriza (Macquarie University)</b> Controlling the interaction of photons with nanostructures
12:50 – 14:30	<i>Lunch break on individual basis at near-by restaurants</i>
14:30 – 14:55	<b>Johannes Kofler (MPI of Quantum Optics, Garching)</b> Requirements for a loophole-free Bell test using imperfect setting generators
14:55 – 15:20	<b>Kaoru Sanaka (Tokyo University of Science)</b> Photon-photon interaction with linear optics and semiconductor devices
15:20 – 15:45	<b>Rupert Ursin (VCQ &amp; IQOQI Vienna)</b> Experiments with quantum entanglement in space
15:45 – 16:10	<b>Christoph Simon (University of Calgary)</b> Towards global entanglement
16:10 – 16:40	<i>Coffee break</i>
16:40 – 17:05	<b>Nathan Langford (QuTech &amp; Kavli Inst. of Nanoscience, TU Delft)</b> Digital quantum simulation of the ultrastrongly coupled Rabi model in a circuit QED system
17:05 – 17:30	<b>Simon Gröblacher (Delft University of Technology)</b> Quantum experiments: from small to large
17:30 – 17:55	<b>Anthony Klein (University of Melbourne)</b> Some early experiments in neutron optics presented in honour of Anton Zeilinger
17:55 – 18:20	<b>Julian Voss-Andreae (Portland, Oregon)</b> Sculptures inspired by Physics, Proteins, and People

**Friday, 22 May 2015**

Großer Festsaal, 1st floor, University of Vienna, Universitätsring 1, 1010 Vienna

09:00 – 09:25	<b>Paul Kwiat (University of Illinois)</b> Superdense Teleportation Using Hyperentangled Photons
09:25 – 9:50	<b>Terry Rudolph (Imperial College London)</b> How Einstein and/or Schroedinger should have discovered Bell's Theorem in 1936
9:50 – 10:15	<b>Dirk Bouwmeester (University of Leiden)</b> Knots of light, gravitational radiation, and plasma
10:15 – 10:40	<b>Ernst Rasel (Leibniz University Hannover)</b> Quantum Gravimetry
10:40 – 11:10	<i>Coffee break</i>
11:10 – 11:35	<b>Daniel Greenberger (The City College of New York)</b> To be announced
11:35 – 12:00	<b>Marek Zukowski (University of Gdansk)</b> Swapping Entanglement with Quanton
12:00 – 12:25	<b>Caslav Brukner (VCQ &amp; University of Vienna &amp; IQOQI Vienna)</b> Reconstructions of quantum theory - pros and contras
12:25 – 12:50	<b>Harald Weinfurter (LMU Munich)</b> Verschränkt - not only entangled
12:50 – 13:20	<b>Anton Zeilinger (VCQ &amp; University of Vienna &amp; ÖAW)</b>

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