**EmQM17** | Day 1: Thursday, October 26th 2017

**Chair: Jan Walleczek**

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| 8:45–9:00 | Welcome Address |
| 9:00–9:30 | Jan Walleczek *(Phenoscience Laboratories, Berlin, DE)*<br>Towards Ontology of Quantum Mechanics and the Conscious Agent |
| 9:30–10:15 | **KEYNOTE LECTURE**<br>Basil Hiley *(University of London, UK)*<br>Bohm, Physicist Philosopher: The Battle to find a Satisfactory Quantum Ontology |
| 10:15–10:30 | Coffee break |
| 10:30–11:00 | Howard Wiseman *(Griffith University, Brisbane, AU)*<br>Relativistic Causality and Bell's Theorems |
| 11:00–11:30 | Shan Gao *(Shanxi University, CN)*<br>A Particle Ontological Interpretation of the Wave Function |
| 11:30–12:00 | Roderich Tumulka *(University of Tübingen, DE)*<br>Bohmian Trajectories as the Foundation of Quantum Mechanics and Quantum Field Theory |
| 12:00–13:30 | Lunch break |

**Chair: Howard Wiseman**

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| 13:30–14:15 | **KEYNOTE LECTURE**<br>Aephraim Steinberg *(University of Toronto, CA)*<br>Experimental studies of quantum reality |
| 14:15–14:35 | Chuan-Feng Li *(University of Science and Technology of China, Hefei, CN)*<br>Experiment on nonlocal steering of Bohmian trajectories |
| 14:35–15:05 | Lev Vaidman *(Tel Aviv University, IL)*<br>Are expectation values and weak values properties of single quantum systems? |
| 15:05–15:20 | Coffee break |
| 15:20–15:50 | Herman Batelaan *(University of Nebraska-Lincoln, USA)*<br>Quantum forces and non-dispersivity in the Aharonov-Bohm effect |
| 15:50–16:10 | Peter Barker *(University College London, UK)*<br>Weak Measurements of Atomic Momentum |
| 16:10–16:30 | Robert Flack *(University College London, UK)*<br>Observation of the weak value of spin using a metastable form of helium |
| 16:30–16:50 | Markus Arndt *(University of Vienna, AT)*<br>What quantum-interference assisted molecule metrology can tell us about reality and non-locality |
| 16:50–17:05 | Coffee Break |

**Chair: Robert Flack**

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| 17:05–17:50 | **KEYNOTE LECTURE**<br>Matthew Leifer *(Chapman University, Orange, USA)*<br>The Problem of Fine-Tuning in Quantum Theory |
| 17:50–18:20 | Basil Hiley *(University of London, UK)*<br>Aspects of Non-commutative Geometry: Deformation Quantum Mechanics |
| 18:20–18:50 | Gerhard Grössing *(Austrian Institute for Nonlinear Studies, Vienna, AT)*<br>Vacuum Landscaping: Cause of Nonlocal Influences without Signalling |
| 19:00–21:00 | Poster Presentations, Dinner Buffet, Discussion |

**EmQM17** | Day 2: Friday, October 27th 2017

**Chair: Markus Arndt**

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| 9:00–9:45 | **KEYNOTE LECTURE**<br>Yakir Aharonov *(Tel Aviv University, IL, and Chapman University, Orange, USA)*<br>Finally making sense of the double-slit experiment |
| 9:45–10:15 | Jeff Tollaksen *(Chapman University, Orange, USA)*<br>A Completely Top-Down Hierarchical Structure in Quantum Mechanics |
| 10:15–10:30 | Coffee break |
| 10:30–11:00 | Nicolas Gisin *(University of Geneva, CH)*<br>Non-determinism in Newtonian mechanics and the classical "measurement" problem |
| 11:00–11:20 | Thomas Filk *(University of Freiburg, DE)*<br>A quantum ontology based on a relational notion of space |
| 11:20–11:40 | Ana María Cetto *(Universidad Nacional Autónoma de México, MX)*<br>Quantum interconnectedness and induced nonlocality |
| 11:40–12:00 | Tim Palmer *(University of Oxford, UK)*<br>Does Bohmian Theory Have to Be Nonlocal? New Directions for Analysing the Bell Theorem |
| 12:00–13:30 | Lunch break |

**Chair: Nicolas Gisin**

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| 13:30-14:15 | KEYNOTE LECTURE<br>Max Tegmark *(Massachusetts Institute of Technology, Cambridge, USA)*<br>Why quantum observers find lower entropy after observation and in our early universe? |
| 14:15–14:45 | Bei-Lok Hu *(University of Maryland, College Park, USA)*<br>Equivalence Principles for Quantum Systems |
| 14:45–15:05 | Ward Struyve *(University of Munich, DE)*<br>Must space-time be singular? |
| 15:05–15:20 | Coffee Break |

**Chair: Jeff Tollaksen**

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| 15:20–15:50 | Anthony Aguirre *(University of California, Santa Cruz, USA)*<br>Observer-dependent entropy and the Second Law |
| 15:50–16:10 | Hans-Thomas Elze *(University of Pisa, IT)*<br>On the question of ontological states in simple (pre-)quantum models |
| 16:10–16:30 | Maurice de Gosson *(University of Vienna, AT)*<br>What happens to quantum states if Planck's constant changes? |
| 16:30–16:45 | Coffee Break |
| 16:45–17:30 | **KEYNOTE LECTURE**<br>Tim Maudlin *(New York University, USA)*<br>Ontological Clarity, Electromagnetism and the Aharanov-Bohm Effect |
| from 17:30 | Open Evening |

**EmQM17** | Day 3: Saturday, October 28th 2017

**Chair: Paavo Pylkkänen**

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| 9:00–9:15 | Paavo Pylkkänen and Jan Walleczek<br>Introduction to Day Three of the EmQM17 Symposium |
| 9:15-10:00 | **KEYNOTE LECTURE**<br>Huw Price *(University of Cambridge, UK)*<br>Two Paths to the Parisian Zigzag |
| 10:00–10:30 | Kenneth Wharton *(San Jose State University, USA)*<br>Live Options for Spacetime-Based Physics |
| 10:30–10:45 | Coffee Break |
| 10:45–11:15 | Emily Adlam *(University of Cambridge, UK)*<br>A Tale of Two Anachronisms |
| 11:15–11:35 | Nathan Argaman *(Nuclear Research Center Negev, Beer Sheva, IL)*<br>A Lenient Causal Arrow of Time? |
| 11:35–12:00 | Jan Walleczek *(Phenoscience Laboratories, Berlin, DE)*<br>Nonlocality or Local Retrocausality? – The Non-signalling Theorem in Ontological Quantum Mechanics |
| 12:00–13:30 | Lunch Break |

**Chair: Jan Walleczek**

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| 13:30–14:15 | **KEYNOTE LECTURE**<br>Sir Roger Penrose *(University of Oxford, UK)*<br>Space-Time Quantum Non-Locality: Does Palatial Twistor Theory Suggest an Objective Mathematical Framework? |
| 14:15–14:45 | Stuart Hameroff *(University of Arizona, Tucson, USA)*<br>Anesthesia, Consciousness, Bohm and Penrose |
| 14:45–15:15 | Paavo Pylkkänen *(University of Helsinki, FI, and University of Skövde, SE)*<br>The quantum potential – classical or something entirely new? |
| 15:15–15:30 | Coffee Break |
| 15:30–16:00 | William Seager *(University of Toronto, CA)*<br>One or Many |
| 16:00–16:20 | Nikolaus von Stillfried *(Phenoscience Laboratories, Berlin, DE)*<br>Does the wave function refer to the (proto)phenomenal? Exploring a radical hypothesis about consciousness based on a Bohm-type interpretation of quantum physics |
| 16:20–16:40 | Andrei Khrennikov *(Linnaeus University, Växjö, SE)*<br>Bohmian model outside of physics |
| 16:40–16:50 | Anthony Aguirre, Max Tegmark, Jan Walleczek<br>Foundational Questions Institute (FQXi) – Fetzer Franklin Fund (FFF) Joint Grant Awards Program Launch |
| 16:50–17:00 | Closing Ceremony and Book Announcement |
| 19:00–23:00 | Gala Dinner |