

**THURSDAY, OCTOBER 26th 2017**

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| CHAIR         | <b>JAN WALLECZEK</b>  |
| 08:45 – 09:00 | Welcome Address   |
| 09:00 – 09:30 | <b>Jan Walleczek</b> <i>Phenoscience Laboratories, Berlin, DE</i><br>Towards Ontology of Quantum Mechanics and the Conscious Agent                        |
| 09:30 – 10:15 | KEY NOTE LECTURE<br><b>Basil Hiley</b> <i>University of London, UK</i><br>Bohm, Physicist Philosopher: The Battle to find a Satisfactory Quantum Ontology |

**COFFEE BREAK**

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| 10:30 – 11:00 | <b>Howard Wiseman</b> <i>Griffith University, Brisbane, AU</i><br>Relativistic Causality and Bell's Theorems                                      |
| 11:00 – 11:30 | <b>Shan Gao</b> <i>Shanxi University, CN</i><br>A Particle Ontological Interpretation of the Wave Function  |
| 11:30 – 12:00 | <b>Roderich Tumulka</b> <i>University of Tübingen, DE</i><br>Bohmian Trajectories as the Foundation of Quantum Mechanics and Quantum Field Theory |

**LUNCH BREAK**

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| CHAIR         | <b>HOWARD WISEMAN</b>   |
| 13:30 – 14:15 | KEY NOTE LECTURE<br><b>Aephraim Steinberg</b> <i>University of Toronto, CA</i><br>Experimental studies of quantum reality         |
| 14:15 – 14:35 | <b>Chuan-Feng Li</b> <i>USTC, Hefei, CN</i><br>Experiment on nonlocal steering of Bohmian trajectories                            |
| 14:35 – 15:05 | <b>Lev Vaidman</b> <i>Tel Aviv University, IL</i><br>Are expectation values and weak values properties of single quantum systems? |

**COFFEE BREAK**

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| 15:20 – 15:50 | <b>Herman Batelaan</b> <i>University of Nebraska-Lincoln, USA</i><br>Quantum forces and non-dispersivity in the Aharonov-Bohm effect                    |
| 15:50 – 16:10 | <b>Peter Barker</b> <i>University College London, UK</i><br>Weak Measurements of Atomic Momentum  |
| 16:10 – 16:30 | <b>Robert Flack</b> <i>University College London, UK</i><br>Observation of the weak value of spin using a metastable form of helium                     |
| 16:30 – 16:50 | <b>Markus Arndt</b> <i>University of Vienna, AT</i><br>What quantum-interference assisted molecule metrology can tell us about reality and non-locality |

**COFFEE BREAK**

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| CHAIR         | <b>ROBERT FLACK</b>  |
| 17:05 – 17:50 | KEY NOTE LECTURE<br><b>Matthew Leifer</b> <i>Chapman University, Orange, USA</i><br>The Problem of Fine-Tuning in Quantum Theory |
| 17:50 – 18:20 | <b>Basil Hiley</b> <i>University of London, UK</i><br>Aspects of Non-commutative Geometry: Deformation Quantum Mechanics         |
| 18:20 – 18:50 | <b>Gerhard Grössing</b> <i>AiNS, AT</i><br>Vacuum Landscaping: Cause of Nonlocal Influences without Signalling                   |
| 19:00 – 21:00 | <b>Poster Presentations, Dinner Buffet, Discussion</b>   |

**FRIDAY, OCTOBER 27th 2017**

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| CHAIR         | <b>MARKUS ARNDT</b>   |
| 09:00 – 09:45 | KEY NOTE LECTURE<br><b>Yakir Aharonov</b> <i>Tel Aviv University, IL</i><br>Finally making sense of the double-slit experiment    |
| 09:45 – 10:15 | <b>Jeff Tollaksen</b> <i>Chapman University, Orange, USA</i><br>A Completely Top-Down Hierarchical Structure in Quantum Mechanics |

**COFFEE BREAK**

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|---------------|---|
| 10:30 – 11:00 | <b>Nicolas Gisin</b> <i>University of Geneva, CH</i><br>Non-determinism in Newtonian mechanics and the classical „measurement“ problem      |
| 11:00 – 11:20 | <b>Thomas Filk</b> <i>University of Freiburg, DE</i><br>A quantum ontology based on a relational notion of space                            |
| 11:20 – 11:40 | <b>Ana María Cetto</b> <i>Universidad Nacional Autónoma de México, MX</i><br>Quantum interconnectedness and induced nonlocality             |
| 11:40 – 12:00 | <b>Tim Palmer</b> <i>University of Oxford, UK</i><br>Does Bohmian Theory Have to Be Nonlocal? New Directions for Analysing the Bell Theorem |

**LUNCH BREAK**

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| CHAIR         | <b>NICOLAS GISIN</b>  |
| 13:30 – 14:15 | KEY NOTE LECTURE<br><b>Max Tegmark</b> <i>MIT, Cambridge, USA</i><br>Why quantum observers find lower entropy after observation and in our early universe |
| 14:15 – 14:45 | <b>Bei-Lok Hu</b> <i>University of Maryland, College Park, USA</i><br>Equivalence Principles for Quantum Systems  |
| 14:45 – 15:05 | <b>Ward Struyve</b> <i>University of Munich, DE</i><br>Must space-time be singular?   |

**COFFEE BREAK**

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| CHAIR         | <b>JEFF TOLLAKSEN</b>   |
| 15:20 – 15:50 | <b>Anthony Aguirre</b> <i>University of California, Santa Cruz, USA</i><br>Observer-dependent entropy and the Second Law      |
| 15:50 – 16:10 | <b>Hans-Thomas Elze</b> <i>University of Pisa, IT</i><br>On the question of ontological states in simple (pre-)quantum models |
| 16:10 – 16:30 | <b>Maurice de Gosson</b> <i>University of Vienna, AT</i><br>What happens to quantum states if Planck's constant changes?      |

**COFFEE BREAK**

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| 16:45 – 17:30 | KEY NOTE LECTURE<br><b>Tim Maudlin</b> <i>New York University, USA</i><br>Ontological Clarity, Electromagnetism and the Aharonov-Bohm Effect |
| from 17:30    | <b>Open Evening</b>  |

**SATURDAY, OCTOBER 28th 2017**

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| CHAIR         | <b>PAAVO PYLKKÄNEN</b>  |
| 09:00 – 09:15 | <b>Paavo Pylkkänen &amp; Jan Walleczek</b><br>Introduction to Day Three of the EmQM17 Symposium             |
| 09:15 – 10:00 | KEY NOTE LECTURE<br><b>Huw Price</b> <i>University of Cambridge, UK</i><br>Two Paths to the Parisian Zigzag |
| 10:00 – 10:30 | <b>Kenneth Wharton</b> <i>San Jose State University, USA</i><br>Live Options for Spacetime-Based Physics    |

**COFFEE BREAK**

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|---------------|---|
| 10:45 – 11:15 | <b>Emily Adlam</b> <i>University of Cambridge, UK</i><br>A Tale of Two Anachronisms   |
| 11:15 – 11:35 | <b>Nathan Argaman</b> <i>Nuclear Research Center Negev, BeerSheva, IL</i><br>A Lenient Causal Arrow of Time?  |
| 11:35 – 12:00 | <b>Jan Walleczek</b> <i>Phenoscience Laboratories, Berlin, DE</i><br>Nonlocality or Local Retrocausality? – The Non-signalling Theorem in Ontological Quantum Mechanics |

**LUNCH BREAK**

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| CHAIR         | <b>JAN WALLECZEK</b>   |
| 13:30 – 14:15 | KEY NOTE LECTURE<br><b>Sir Roger Penrose</b> <i>University of Oxford, UK</i><br>Space-Time Quantum Non-Locality: Does Palatial Twistor Theory Suggest an Objective Mathematical Framework? |
| 14:15 – 14:45 | <b>Stuart Hameroff</b> <i>University of Arizona, Tucson, USA</i><br>Anesthesia, Consciousness, Bohm and Penrose  |
| 14:45 – 15:15 | <b>Paavo Pylkkänen</b> <i>University of Helsinki, FI</i><br>The quantum potential – classical or something entirely new?   |

**COFFEE BREAK**

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|---------------|---|
| 15:30 – 16:00 | <b>William Seager</b> <i>University of Toronto, CA</i><br>One or Many   |
| 16:00 – 16:20 | <b>Nikolaus von Stillfried</b> <i>Phenoscience Laboratories, Berlin, DE</i><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 | <b>Andrei Khrennikov</b> <i>Linnaeus University, Växjö, SE</i><br>Bohmian model outside of physics  |
| 16:40 – 16:50 | <b>Anthony Aguirre, Max Tegmark, Jan Walleczek</b><br>Foundational Questions Institute (FQXi) – Fetzer Franklin Fund (FFF)<br>Joint Grant Awards Program Launch   |
| 16:50 – 17:00 | <b>Closing Ceremony &amp; Book Announcement</b>   |
| 19:00 – 23:00 | <b>Gala Dinner</b>  |