

# QUANTUM MECHANICS, PHYSICAL AND METAPHYSICAL ISSUES

## FINAL PROGRAMME

### Scientific committee:

Prof.dr. Virgil BĂRAN  
Conf.dr. Sorin COSTREIE  
Lect.dr. Roxana ZUS

### Organising committee:

Conf.dr. Sorin COSTREIE  
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Drd. Sandra BRÂNZARU  
Drd. Andreea GHINESCU

May 5 <sup>th</sup>	May 6 <sup>th</sup>	May 7 <sup>th</sup>
<p><b>13:30-14:30 Welcome and Opening Remarks</b></p> <p><b>Constantin Vică</b> (University of Bucharest) <b>Lucian Ion</b> (University of Bucharest) <b>Andrei Mărășoiu</b> (University of Bucharest) <b>Virgil Băran</b> (University of Bucharest) <b>Sorin Costreie</b> (University of Bucharest)</p> <p><b>14:30-15:00 Break</b></p> <p><b>Plenary Session</b></p> <p><b>15:00-15:30 Ioan Muntean</b> (University of Texas Rio Grande Valley) <i>Quantum metaphysical indeterminacy with decoherence: a relational, hybrid, and epistemicist approach.</i></p> <p><b>15:30-16:00 Ștefan Ataman</b> (Horia Hulubei National Institute for R&amp;D in Physics and Nuclear Engineering) <i>Teaching quantum mechanics: what I learned from my students.</i></p> <p><b>16:00-16:30 Break</b></p>	<p><b>Plenary Session</b></p> <p><b>10:00-10:30 Aurelian Isar</b> (Horia Hulubei National Institute for R&amp;D in Physics and Nuclear Engineering; University of Bucharest) <i>Marvels of the Micro-Universe – Quantum Leap Through Time.</i></p> <p><b>10:30-11:00 Daniel Ursescu</b> (Horia Hulubei National Institute for R&amp;D in Physics and Nuclear Engineering; University of Bucharest) <i>Reflection on objects and concepts in Physics after one century of Quantum Mechanics.</i></p> <p><b>11:00-11:30 Ana-Nicoleta Bondar</b> (University of Bucharest) <i>Cell signalling in the brain: how we use quantum mechanics, classical mechanics, and graph theory to understand opioid receptors.</i></p> <p><b>11:30-12:00 Andrei Mărășoiu</b> (University of Bucharest) <i>Seeing it with your own eyes: visualisation and understanding.</i></p> <p><b>12:00-12:30 Radu Ionicioiu</b> (Department of Theoretical Physics Horia Hulubei National Institute of Physics and Nuclear Engineering IFIN-HH) <i>Einstein, Wheeler, Bohr - from classical to quantum delayed-choice.</i></p> <p><b>12:30-13:00 Maria Țițeica</b> (University of Bucharest) <i>After 100 years: quantum mechanics viewed by physics and philosophy.</i></p>	<p><b>Contributed Talks</b></p> <p><b>10:00-10:30 Daniel-Grigore Chelaru</b> (University of Bucharest) <i>An observer-centric approach to the measurement and time problems of quantum mechanics.</i></p> <p><b>10:30-11:00 Marina Cuzminschi</b> (Horia Hulubei National Institute for R&amp;D in Physics and Nuclear Engineering) <i>Nonlocal correlations and quantum communication.</i></p> <p><b>11:00-11:30 Lena Roșu</b> (University of Bucharest) <i>Unravelling Temporal Knots.</i></p> <p><b>11:30-12:00 Andrew-Julian Tatu</b> (University of Bucharest) și <b>Robert Antonio Ivănescu</b> (University of Bucharest) <i>Revisiting the Double-Slit Experiment: Observation, Reality, and a New Perspective.</i></p> <p><b>12:00-12:30 Fernández Cuesta José Alejandro</b> (Universidad Complutense de Madrid) <i>Quantum Logics and Metaphysics.</i></p> <p><b>12:30-13:00 Andreea Cruglic-Popescu</b> (Ghinescu) (University of Bucharest) <i>Title: TBA</i></p>

<p><b>Workshops for pupils, held in Romanian – in parallel with the Plenary Session</b></p> <p><b>14:30-15:30 Mădălina Boca (University of Bucharest)</b> <i>Fizica imposibilului: Cum trec particulele prin pereți.</i></p> <p><b>14:30-15:30 Leonard Gebac (University of Bucharest)</b> <i>Selfie cu atomii.</i></p> <p><b>15:30-16:30 Iulia Ghiu (University of Bucharest)</b> <i>Introducere in criptografia cuantică.</i></p> <p><b>16:30-17:50 Roundtable</b></p> <p><b>18:00-19:00 Keynote Address</b> <b>Mircea Flonta (University of Bucharest).</b> <i>Ce fel de filosofie este filosofia Școlii de la Copenhaga?</i> (*Romanian)</p>	<p><b>13:00-14:00 Break</b></p> <p><b>Contributed Talks</b></p> <p><b>14:00-14:30 Miller Ryan (University of Geneva)</b> <i>No Metaphysical Advantage for Bohmians.</i></p> <p><b>14:30-15:00 Cayuss Andrei Mihăițoia (University of Bucharest; Horia Hulubei National Institute for R&amp;D in Physics and Nuclear Engineering) <i>How is thermal equilibrium extended to quantum mechanics? Intuition and paradoxes</i></b></p> <p><b>15:00-15:30 Andreea Silvia Goia (University of Bucharest; Horia Hulubei National Institute for R&amp;D in Physics and Nuclear Engineering) <i>Quantum cheshire cat: can particles be separated from their properties?</i></b></p> <p><b>15:30-16:00 Break</b></p> <p><b>Workshops for pupils, held in Romanian – in parallel with Contributed Talks.</b></p> <p><b>14:00-14:45 Andrei Mărășoiu (University of Bucharest)</b> <i>Ce este o cauză?</i></p> <p><b>15:00-15:45 Sandra Brânzaru (University of Bucharest)</b> <i>Ce este o explicație?</i></p> <p><b>16:00-17:00 Andreea Croitoru (University of Bucharest)</b> <i>Ce au în comun o pisică, o damă de pică și un calculator cuantic?</i></p> <p><b>16:00-17:00 Mădălina Boca (University of Bucharest)</b> <i>Fizica imposibilului: Cum trec particulele prin pereți.</i></p> <p><b>16:00-17:00 Keynote Address:</b> <b>Sorin Bangu (University of Bergen).</b> <i>Non-causal explanations in Quantum Mechanics.</i></p>	<p><b>13:00-14:00 Break</b></p> <p><b>14:00-14:30 Ristea Victor (University of Bucharest)</b> <i>Quantum mechanics did not save free will and quantum computing will not save the simulation theory either.</i></p> <p><b>14:30-15:00 Peter Hertogh (Chongqing University and VUB Brussels)</b> <i>Thought Experimental Analyses of Albert Einstein's Chasing a Beam of Light.</i></p> <p><b>15:00-15:30 Alexandru Chirvasă (University of Bucharest; Horia Hulubei National Institute for R&amp;D in Physics and Nuclear Engineering)</b> <i>Dynamics of Quantum Correlations based on Rényi-2 Entropy.</i></p> <p><b>15:30-16:00 Alina-Alexandra Stoica (Horia Hulubei National Institute for R&amp;D in Physics and Nuclear Engineering; University of Bucharest)</b> <i>Environment-assisted generation of quantum correlations in open quantum systems.</i></p> <p><b>16:00-16:30 Juan Vila (University of Buenos Aires)</b> <i>What is real is relational: a metaphysical assessment of Relational Quantum Mechanics.</i></p> <p><b>16:30-17:00 Tatiana Mihăescu (Horia Hulubei National Institute for R&amp;D in Physics and Nuclear Engineering)</b> <i>Entanglement and Steering in Continuous Variable States.</i></p> <p><b>17:00-17:30 Concluding Remarks</b></p>
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