Program

Monday, 19 April 2021		Time CET
08:55 – 09:00	Scientific organizers	**Welcome**
09:00 – 09:15	Stefan Jorda	**About the Wilhelm and Else Heraeus Foundation**
09:15 – 10:00	Wolfgang Schleich	**Schrödinger and Wigner wave functions revisited**
10:00 – 10:45	Lajos Diosi	**On Quantum-Classical Hybrid Canonical Dynamics**
10:45 – 11:15	*COFFEE BREAK*	
11:15 – 12:00	Aurelia Chenu	**On control of open quantum systems, with applications to thermalization**
12:00 – 12:30	Viktor Gerasimenko	**Evolution equations of quantum-classical systems**
12:30 – 14:00	*LUNCH BREAK*	
14:00 – 14:45	Raymond Kapral	**Quantum-classical wave functions and densities**
14:45 – 15:30	Stephen Fulling	**Quantum Field Theory in Curved Space-Time: Semiclassical in More Ways than One**
15:30 – 16:00	*COFFEE BREAK*	
16:00 – 16:30	Martin Bojowald	**Canonical description of quantum dynamics**
16:30 – 17:15	Igor Mezic	**A Transfer Operator Approach to Relativistic Quantum Wavefunction**
17:15 – 18:30	**Discussion session**	

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15:15 – 16:00	Dorje Brody	**Phase-space approach to relativistic quantum theory**
16:00 – 16:45	Eberhard Gross	**Mixed-quantum-classical algorithms from the exact factorization**
16:45 – 17:15	*COFFEE BREAK*	
17:15 – 18:00	Cesare Tronci and Denys Bondar	**Koopman wavefunctions and hybrid quantum-classical models**
18:00 – 18:30	Hans-Thomas Elze	**Are they really 'out there'? On the ontology of quantum-classical hybrids**
18:30 – 20:00	*LUNCH BREAK*	
20:00 – 20:45	François Gay-Balmaz	**Symplectic geometry of hybrid quantum-classical dynamics**
20:45 – 21:15	Ilon Joseph	**Quantum Acceleration of the Koopman-von Neumann Approach to Nonlinear Classical Dynamics**
21:15 – 21:45	Ilya Dodin	**Operator methods for reduced modeling of waves in plasmas**
21:45 – 00:30	**Poster Session**	

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09:15 – 10:00	Giovanni Manfredi	**Phase-space and hydrodynamic methods for polarized quantum plasmas**
10:00 – 10:45	Caroline Lasser	**Separation of scales and quantum-classical approximation**
10:45 – 11:15	*COFFEE BREAK*	
11:15 – 12:00	Irene Burghardt	**Towards a multi-configurational formulation of quantum-classical molecular dynamics**
12:00 – 12:30	Jean-Claude Zambrini	**Space-time stochastic control and Schrödinger's problem**
12:30 – 14:00	*LUNCH BREAK*	
14:00 – 14:45	Anthony Bloch	**Control and Geometry of Quantum Systems with Dissipation**
14:45 – 15:30	Paul Brumer	**A Koopman Type Approach in Quantum-Classical Correspondence: e.g., Chaotic Dynamics, The Born Rule and No-Cloning**
15:30 – 16:00	*COFFEE BREAK*	
16:00 – 16:30	Gerard McCaul	**Classical Influence Functionals**
16:30 – 17:00	Joanna Slawinska	**A Quantum Mechanical Approach for Data Assimilation of Dynamical Systems**
17:00 – 17:30	Andre Gontijo Campos	**The Dirac equation and its classical limit**
17:30 – 18:30	**Discussion session**	

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15:15 – 16:00	Maurice de Gosson	**On chalkboard motion**
16:00 – 16:45	Guiseppe Marmo	**Quantum Tomography and Schwinger's Approach to Quantum Mechanics**
16:45 – 17:15	*COFFEE BREAK*	
17:15 – 18:00	Ulf Klein	**Quantum theory as a randomized projection from phase space to configuration space**
18:00 – 18:30	Federica Agostini	**Simulating ultrafast non-radiative phenomena with the exact factorization**
18:30 – 20:00	*LUNCH BREAK*	
20:00 – 20:45	Nelida Črnjarić-Žic	**The Application of Koopman Operator-based Algorithms to Nonautonomous and Stochastic Systems**
20:45 – 21:30	Dimitris Giannakis	**Quantum Mechanical Embeddings of Classical Dynamical Systems**
21:30 – 22:00	*COFFEE BREAK*	
22:00 – 22:30	Francesco Di Maiolo	**Theoretical Approaches to Quantum Molecular Dynamics in Out of Equilibrium Environments**
22:30 – 23:15	Artur Izmaylov	**Quantum Nonadiabatic Dynamics in the Moving Crude Adiabatic Representation**
23:15 – 23:45	*BREAK*	
23:45 – 00:30	**Discussion session**	

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09:15 – 10:00	Daniel Terno	**Quantum-classical hybrid dynamics**
10:00 – 10:45	Stefan Klus	**Kernel-based approximation of the Koopman generator and Schrödinger operator**
10:45 – 11:15	*COFFEE BREAK*	
11:15 – 11:45	Jonathan Oppenheim	**Classical-quantum General Relativity**
11:45 – 12:15	Benito A. Juárez-Aubry	**Semiclassical gravity in static spacetimes as a constrained initial value problem**
12:15 – 12:45	Dmitry Zhdanov	**Joint quantum-classical Hamilton variation principle in the phase space**
12:45 – 14:00	*LUNCH BREAK*	
14:00 – 14:45	Marcel Reginatto	**Classical-quantum interactions: observables, symmetries and uncertainties**
14:45 – 15:30	Ignacio Franco	**Quantum Coherence in Chemistry: Tackling the Decoherence Challenge**
15:30 – 16:00	Scientific organizers	**Closing remarks**

End of seminar