

High Dimensional Quantum Dynamics

Hamburg, Germany July 16-19, 2024

Invited Talks (IT)	Contributed Talks (CT)
25 min + 5 min discussion	15 min + 5 min discussion

TIME	TUESDAY
from 8:00 on	Registration
9:15 - 9:30	Welcome
Chair:	<i>U. Manthe</i>
9:30 - 10:00	IT1: <i>M. Thoss</i> - <u>Simulation of quantum dynamics and transport using the hierarchical equations of motion method</u>
10:00 - 10:30	IT2: <i>H. Wang</i> - <u>Dynamics of electron transfer and transport in complex glassy environment</u>
10:30 - 11:00	Coffee break
11:00 - 11:30	IT3: <i>F. Santoro</i> - <u>Mixed Quantum-Classical Dynamical Approaches for Studying the Photophysics of Complex Systems</u>
11:30 - 12:00	IT4: <i>S. Gomez</i> - <u>Blending non-adiabatic dynamics methods to describe tetraphenylpyrazine</u>
12:00 - 14:00	Lunch break
Chair:	<i>G. Worth</i>
14:00 - 14:30	IT5: <i>J. Küpper</i> - <u>Ultrafast dynamics in microsolvated biomolecules</u>
14:30 - 15:00	IT6: <i>D. Lauvergnat</i> - <u>Solving time-(in)dependent Schrödinger equation with Smolyak scheme using a system-bath like partition</u>
15:00 - 15:30	IT7: <i>C. Sanz</i> - <u>Multi-state coupled driven photodissociation</u>
15:30 - 16:00	Coffee break
16:00 - 16:30	IT8: <i>T. Carrington</i> - <u>An MCTDH collocation method with more points than basis functions: obviating integrals</u>
16:30 - 16:50	CT1: <i>T. Niermann</i> - <u>Multidimensional Hubbard models in the MCTDH framework</u>
16:50 - 17:10	CT2: <i>X. Meng</i> - <u>Quantum Dissipation with Minimally Extended State Space: A Universal Framework for Exact Time-Local Evolution Equations</u>
17:10 - 17:30	CT3: <i>N. Jamshidi</i> - <u>Dynamics of Plasmonic Nanocavities Using a Linear Vibronic Coupling Hamiltonian</u>
18:00 - 20:00	Welcome Reception

TIME	WEDNESDAY
Chair:	<i>O. Vendrell</i>
9:00 - 9:30	IT9: <i>E. Narevicius</i> - <u>Collisions with Cold Molecules: Tomography of Feshbach resonances</u>
9:30 - 10:00	IT10: <i>H. Larsson</i> - <u>High-Dimensional Quantum Dynamics Simulations using Tensor Network States</u>
10:00 - 10:30	IT11: <i>G. Worth</i> - <u>Non-Adiabatic Spectroscopy and Dynamics: The Linear Vibronic Coupling Model and Beyond</u>
10:30 - 11:00	Coffee break
11:00 - 11:30	IT13: <i>I. Burghardt</i> - <u>Vibronic quantum dynamics with multiplicative neural network potentials and multiconfigurational thermo-field wavefunctions</u>
11:30 - 12:00	IT14: <i>D. Picconi</i> - <u>HDQD... DD: Challenges and applications</u>
12:00 - 14:00	At the beginning: Group foto, afterwards: Lunch break
Chair:	<i>M. Thoss</i>
14:00 - 14:30	IT15: <i>H. Sadeghpour</i> - <u>Universality class of a spinor BEC (really) far from equilibrium</u>
14:30 - 15:00	IT16: <i>P. Saalfrank</i> - <u>Spectroscopy and dynamics of molecules strongly coupled to cavity photons</u>
15:00 - 15:30	IT17: <i>O. Vendrell</i> - <u>High-dimensional quantum dynamics with the ML-MCTDH method: a perspective on the applications to protonated water clusters</u>
15:30 - 16:00	Coffee break
16:00 - 16:30	IT18: <i>R. Santra</i> - <u>Techniques for computing the dynamics of matter in strong x-ray fields</u>
16:30 - 16:50	CT4: <i>D. Gorelova</i> - <u>Theoretical description of attosecond imaging and spectroscopy of electron dynamics with ultrashort x-ray pulses</u>
16:50 - 17:10	CT5: <i>N. Krupp</i> - <u>Quantum Dynamics Simulation of Exciton-Polariton Transport in an organic microcavity</u>
17:10 - 17:30	CT6: <i>A. Freibert</i> - <u>A fully dynamical quantum description of ultrafast X-ray spectroscopy of pyrazine</u>
18:00 - 20:00	Poster Session

TIME	THURSDAY
Chair:	<i>I. Burghardt</i>
8:30-9:00	IT19: <i>U. Manthe</i> - <u>Recent developments in the MCTDH approach</u>
9:00 - 9:30	IT20: <i>L. Cao</i> - <u>Orbital entanglement between ultracold lattice atoms: A showcase of how ML-MCTDHX benefits quantum gas investigations</u>
9:30 - 10:00	IT21: <i>S. Mistakidis</i> - <u>Phases and correlated dynamics of droplet and bubble self-bound states of matter</u>
10:00 - 10:30	IT22: <i>E. Matyus</i> - <u>Hyperfine and Zeeman effects in the high-resolution rovibrational spectrum of H₃⁺</u>
10:30 - 11:00	Coffee break
11:00 - 11:20	CT7: <i>F. Theel</i> - <u>Crossover from attractive to repulsive induced interactions and bound states of two distinguishable Bose polarons</u>
11:20 - 11:40	CT8: <i>H. Hoppe</i> - <u>Quantum Dynamics of the Reaction of Chlorine with Methane</u>
11:40 - 12:00	CT9: <i>G. Koutentakis</i> - <u>Optimizing Orbital Angular Momentum Transfer in Ro-Vibrational Spectroscopy of Diatomic Molecules</u>
12:00 - 14:00	Lunch break
14:00 - 17:30	Free Afternoon
17:30	Meeting at Überseebrücke, 20459 Hamburg
18:00 - 21:00	Dinner at Klein Fritzen

TIME	FRIDAY
Chair:	<i>H. Larsson</i>
9:00 - 9:30	IT23: <i>M. Erakovic</i> - <u>Molecular Quantum Dynamics with the Density Matrix Renormalization Group</u>
9:30 - 10:00	IT24: <i>L. Mathey</i> - <u>Time crystals in an atom-cavity system</u>
10:00 - 10:30	IT25: <i>O. Christiansen</i> - <u>Quantum molecular dynamics with coupled cluster and direct methods</u>
10:30 - 11:00	Coffee break
11:00 - 11:30	IT26: <i>O. Alon</i> - <u>Coupled-cluster for trapped bosonic mixtures</u>
11:30 - 11:50	CT10: <i>R. Cuenca</i> - <u>Effect of attosecond electronic coherences on conical-intersection dynamics in core-excited states</u>
11:50 - 12:00	Concluding Remarks
12:00 - 14:00	Lunch break

- All **talks, welcome** and the **concluding remarks** take place at the DESY lecture hall (building 5, Room Auditorium)
- **Welcome Reception** and **coffee breaks** are in the foyer of the DESY lecture hall (building 5)
- **Lunch** is served in the DESY Kantine (building 9, next to the lecture hall)
- On Wednesday, the group photo is taken immediately at the start of the lunch break in front of building 5
- **Poster session** is in the basement of the CFEL (center for free electron laser science, building 99 on the DESY campus)