

Workshop Program

ECT* Online Event

(From November 02-06, 2020 16:00 – 18:00 Central European Time)



Monday November 02, 2020 Machine Learning and Quantum Computing

Panel and discussion leaders: Francesco Pederiva (Univ. of Trento), Martin Savage (UW), Morten Hjorth-Jensen (MSU and University of Oslo) and Thomas Papenbrock (University of Tennessee (UTK) and Oak Ridge National Laboratory (ORNL))

16:00-16.10	Welcome by ECT* Director Jochen Wambach (10)
16.10-16.30	Francesco Pederiva (Univ. of Trento) “ <i>Quantum@Trento</i> ” (15+5)
16.30-17.15	Natalie Klco (Caltech) <i>Musings on the Intersimulatability of Quantum Fields</i> (30+15)
17.15-18.00	Witek Nazarewicz (MSU) “ <i>Bayesian Model Mixing: Nuclear Physics Applications</i> ” (30+15)

Tuesday November 03, 2020 Machine Learning and Quantum Computing

Panel and discussion leader: Thomas Papenbrock, UTK and ORNL

16:00-16.45	Phiala Shanahan (MIT) <i>Machine Learning for Lattice Field Theory</i> (30+15)
16.45-17.45	Zohreh Davoudi (Univ. of Maryland) “ <i>Nuclear Physics Entering a Quantum-simulation Era: Lessons from the Past, Vision for the Future</i> ” (30+15)

Wednesday November 04, 2020 Quantum Computing

Panel and discussion leaders: Arnau Rios, University of Surrey and University of Barcelona and Morten Hjorth-Jensen, MSU and UiO

16:00-16.45	Giuseppe Carleo, (EPFL Lausanne) “ <i>Variational Methods in the Era of Machine Learning: Classical and Quantum Computing Applications</i> ” (30+15)
16.45-17.30	Alessandro Lovato (ANL & Univ. of Trento) “ <i>Neural Network Quantum States for Atomic Nuclei</i> ” (30+15)
17.30-17.45	James Keble (Univ. of Surrey) “ <i>Towards a Machine Learning Description of Nuclei</i> ” (10+5)

17.45-18.00 Krishnan Raghavan (ANL) *“Phys-NN -- A Machine Learning Approach to Invert Nuclear Responses”* (10+5)

Thursday November 05, 2020 Quantum Computing and the ECT*

Panel and discussion leaders: M. Savage, S. Stringari

16.00-16.45 Philipp Hauke (Univ. of Trento) *“Quantum Simulating Lattice Gauge Theories – High-energy Physics at Ultra-cold Temperatures”* (30+15)
16.45-17.30 Kyle Wendt (Lawrence Livermore National Lab) *Prospects for Near Term Quantum Simulations through Optimal Control* (30+15)
17.30-18.00 Daniele Binosi (ECT*) and Tommaso Calarco (Jülich) *“The European Quantum Flagship and the ECT*”* (20+10)

Friday November 06, 2020 Quantum Computing and Machine Learning, Perspectives and Future Vistas

Panel and discussion leaders: All organizers (M. Hjorth-Jensen Chair)

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16.00-16.45 Alessandro Roggero (Univ. of Washington) *“Nuclear Dynamics on Current Generation Quantum Devices”* (30+15)
16.45-17.30 Sofia Vallecorsa (CERN) *“Quantum Technologies for High Energy Physics: the CERN Quantum Technology Initiative”* (30+15)
17.30-18.00 David Dean (ORNL) *“Quantum and the Future”* (15+15)