

Session Program

20-24 Jan 2025



International Conference on Quantum Technologies for High-Energy Physics

Computing and Algorithms

CERN, 500/1-001 - Main Auditorium

Tuesday 21 January

14:00

Computing and Algorithms

Session | **Location:** CERN, 81/R-003C - Science Gateway Auditorium C | **Convener:** Dr Michele Grossi

14:00–14:30 **Efficient Use of Quantum Computers for Collider Physics**

Speaker

Christian Walter Bauer

14:30–15:00

Quantum Machine Learning with Physics-Informed and Symmetry-Aware Models

Speaker

Prof. Oleksandr Kyriienko

15:00–15:30 **Quantum Observables in HEP**

Speaker

Prof. Fabio Maltoni

15:30–16:00 **Coffee break**

16:00–16:30 **Quantum simulating far-from-equilibrium dynamics of gauge theories**

Speaker

Jad C. Halimeh

16:30–17:00 **The quantum life of a Feynman propagator as a qubit**

Speaker

German Rodrigo

17:00

Wednesday 22 January

16:00

Computing and Algorithms

Session | **Location:** CERN, 500/1-001 - Main Auditorium | **Convener:** Dr Michele Grossi

16:00–16:15

On multivariate polynomials achievable with quantum signal processing

Speaker

Lorenzo Laneve

16:15–16:30

Complementary polynomials in quantum signal processing

Speaker

Dr Bjorn Berntson

16:30–16:45

Estimates of loss function concentration in noisy parametrized quantum circuits

Speaker

Giulio Crognaletti

16:45–17:00

Break

17:00–17:15

Guarantees for smart initializations in variational quantum computing

Speaker

Ricard Puig

17:15–17:30

Neural quantum states for lattice field theory

Speaker

Thomas Spriggs

17:30–17:45

Prospects for the quantum simulation of quark-gluon plasma

Speaker

Claudio Sanavio

17:45–18:00

Tree Tensor Network predictors implemented on FPGA for ultra-low latency inference.

Speaker

Lorenzo Borella

18:00