Session Program

20–24 Jan 2025

International Conference on Quantum Technologies for High-Energy Physics

Quantum Computing

CERN, 500/1-001 - Main Auditorium

Thursday 23 January

09:00

Quantum Computing
Session | **Location:** CERN, 500/1-001 - Main Auditorium | **Conveners:** Dr Michele Grossi, Enrique Rico Ortega

09:15–09:30

Some recent progress in the description of atomic nuclei using quantum computers

Speaker
Dr Denis Lacroix

09:30–09:45

Engineering periodic boundary conditions with circuit cutting for high-energy physics

Speaker
Daniel Egger

09:45–10:00

Efficient Encoding of Quantum States for Hamiltonian Simulation of (2+1)-dimensional U(1) Lattice Gauge Theory with Finite Temperature

Speaker
Reita Maeno

10:00–10:15

Enhancing quantum field theory simulations on NISQ devices with Hamiltonian truncation

Speaker
JAMES,ALLAN INGOLDBY

10:15–10:30

Projected Entangled Pair States for Lattice Gauge Theories with Dynamical Fermions

Speaker
Patrick Emonts

10:30–10:45

Fault-tolerant simulation of Lattice Gauge Theories with gauge covariant codes

Speaker
Luca Spagnoli

10:45–11:15 **Coffee break**

11:15–11:30

Building quantum event generators through particle-based formulations

Speaker
Yutaro Iiyama

11:30–11:45 **Quantum Chebyshev Generative model for Fragmentation Functions**

Speaker

Jorge Juan Martinez De Lejarza Samper

11:45–12:00

Efficient calculation of Green's functions on quantum computers via simultaneous circuit perturbation

Speaker

Francesco Tacchino

12:00–12:15

Learning to generate high-dimensional distributions with low-dimensional quantum Boltzmann machines

Speaker

Cenk Tüysüz

12:15–12:30   **Towards quantum advantage with photonic state injection**

Speaker

Léo Monbroussou

12:45