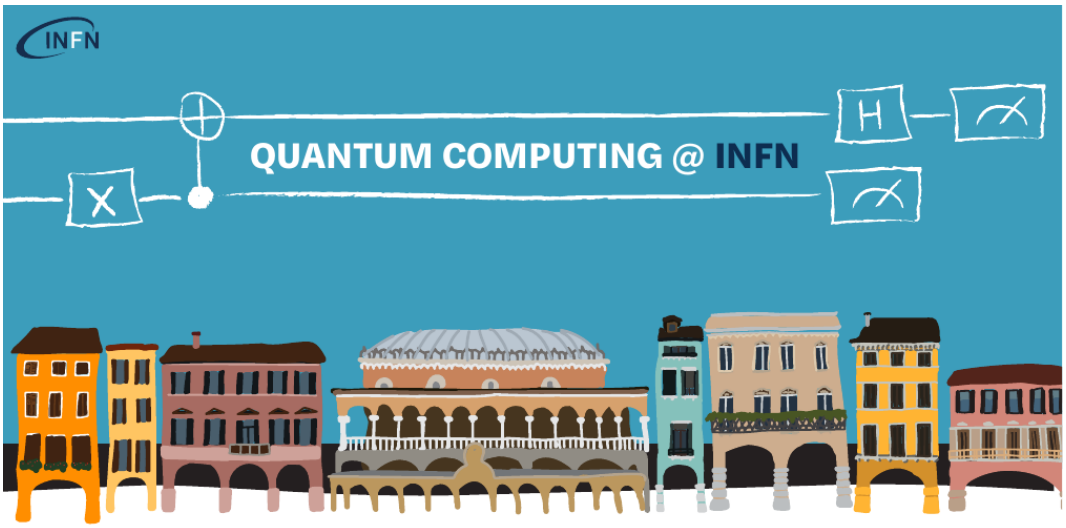
Session Program

Oct 29 – 31, 2024



Quantum Computing @ INFN

Quantum Machine Learning

Padova
Via San Francesco 90, 35121, Padova PD

Tue, October 29

4:20 PM

Quantum Machine Learning

Session | **Location:** Palazzo della Salute, Sala Elettra, Via San Francesco, 90 - Padova

4:20 – 4:40 PM

Grokking as an entanglement transition during training dynamics of MPS machine learning

Speaker
Domenico Pomarico

4:40 – 5:00 PM

QIBO: An open-source modular framework for quantum computing

Speakers
Simone Bordoni, Stefano Carrazza

5:00 – 5:20 PM

Quantum noise modeling through Reinforcement Learning

Speaker
Simone Bordoni

5:20 – 5:40 PM

Early exiting from Quantum Neural Network as a noise mitigation strategy in NISQ devices, a preliminary study

Speaker
Giacomo Vittori

5:40 – 6:00 PM

Quantum diffusion models for quantum data learning

Speaker
Andrea Cacioppo

6:00 – 6:20 PM

Estimates of loss function concentration in noisy parametrized quantum circuits

Speaker
Giulio Crognaletti

6:20 – 6:40 PM

Backend-tailored quantum feature maps optimization through genetic algorithms in neutrino physics

Speaker
Roberto Moretti

6:40 PM

Thu, October 31

9:00 AM

Quantum Machine Learning

Session | **Location:** Palazzo della Salute, Sala Elettra, Via San Francesco, 90 - Padova

9:00 – 9:35 AM **INVITED: Quantum Computing in experimental HEP**

Speakers
Michele Grossi, Dr Michele Grossi

9:35 – 9:55 AM **Quantum Graph Neural Networks for charged particle tracking**

Speaker
Matteo Argenton

9:55 – 10:15 AM **Quantifying the Complexity of Learning Quantum Features**

Speaker
Leonardo Banchi

10:15 – 10:35 AM **Synergy between quantum computers and classical deep learning**

Speaker
Sebastiano Pilati

10:35 – 10:55 AM
Quantum-Enhanced Machine Learning for Classifying Phases of Matter

Speaker
Mehran Khosrojerdi

10:55 AM