High Performance Computing and Quantum Computing – Fifth Edition

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HPCQC Organizing Committee

Local Organizers: Christian Fiori¹, Emanuele Triuzzi¹

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09:15 – 10:00 Check-in
10:00 – 10:10 Welcome

Session 1: European and Italian initiatives – Chairman Daniele Ottaviani

10:10 – 10:25 Paolo Cremonesi (Politecnico di Milano)
The Italian Research Center in High Performance Computing, Big Data and Quantum Computing

10:25 – 10:40 Simone Montangero (University of Padua)
The Quantum Computing and Simulation Center at Padova University

10:40 – 10:55 Kristel Michielsen (Jülich Supercomputing Centre) [Remote Talk]
HPCQS – Preparing Europe for the deployment and federated use of QCS integrated with HPC systems

10:55 – 11:10 Sabine Mehr (GENCI)
EuroQCS-France - Paving the way to a federated European HPC-QCS ecosystem

11:10 – 11:25 Bertrand Le Saux, Alessandro Sebastianelli (ESA)
Bringing the power of quantum machine learning to Earth observation

11:25 – 11:40 Break

Session 2: Start-ups – Chairman Lorenzo Moro

11:40 – 11:55 Caterina Taballione (Quix Quantum)
Quantum Computing based on Photonics

11:55 – 12:10 Artur Garcia (Qilimanjaro) [Remote talk]
Coherent quantum annealing in the cloud with Qilimanjaro

12:10 – 12:25 Niccolò Somaschi (Quandela)
Modular optical quantum computing

12:25 – 12:40 Joseph Chreim (Quantum Brilliance)
The Untouchable Room Temperature Quantum Computer for your HPC Centre

12:40 – 13:00 Keynote: Annarita Giani (GE)
Quantum Computers Industrial Applications

13:00 – 14:30 Lunch
Session 3: Big industries – Chairman Riccardo Mengoni

14:30 – 14:45   Fabio Scafirimuto (IBM)
                 Building the future of quantum computing
14:45 – 15:00   Andy Mason (D-Wave)
                 Practical Quantum Computing – Live!
15:00 – 15:15   Kemal Bidzhiev, Anton Quelle (Pasqal)
                 Cloud on-demand quantum dynamics with Tensor Networks

15:15 – 15:40   Break

Session 4: Universities and research centers – Chairman Enrico Prati

15:40 – 15:50   Enrico Prati (University of Milan, CNR-IFN)
                 Introduction
15:50 – 16:10   Leonardo Guidoni (University of L’Aquila)
                 Quantum Computing for Quantum Chemistry
16:10 – 16:30   Fabio Sciarrino (University of Rome “Sapienza”)
                 Quantum advantage with integrated photonics
16:30 – 16:50   Dario Gerace (University of Pavia)
                 Comparing Quantum and Classical Machine Learning for Vector Boson Scattering
                 Background Reduction at the Large Hadron Collider

16:50 – 17:05   Break

Students’ talks
17:05 – 17:20   Marco Ballarin (University of Padua)
                 Quantum matcha tea: an efficient matrix product state simulator for quantum circuits
17:20 – 17:35   Sebastiano Corli (Politecnico di Milano, CNR-IFN)
                 Simulation and Embedding of measurement based quantum computing algorithms
17:35 – 17:50   Lorenzo Moro (Politecnico di Milano)
                 On the speed-up of adiabatic quantum computers by anomaly detection on IP traffic datasets

17:50 – 18:00   Greetings