

Fundamental Quantum Computing Algorithms and Their Implementation in Qiskit



3–5 April 2023
online

The Czech National Competence Center in HPC is inviting you to a course **Fundamental Quantum Computing Algorithms and Their Implementation in Qiskit**.

Benefits for the attendees and what they will learn:

- Why quantum computers can solve the problem of exponential complexity in less than exponential time.
- The difference between natural quantum parallelism and parallel programming on HPC.
- How to create different kinds of quantum entanglement of two or more qubits.
- What the principle of quantum teleportation is based on?
- What is quantum teleportation's advantages in data transmission security?
- What the quantum superposition is and how particular algorithms use it.
- What the quantum Fourier transform can be used for?
- How to mathematically derive quantum states anywhere in a quantum circuit and thus theoretically verify its functionality.
- How to design a specific quantum circuit based on a quantum algorithm.
- How to test a quantum circuit on a quantum computer or simulator in the Qiskit environment.

Prerequisites

Basic knowledge of linear algebra, complex numbers, Python programming basics, Qiskit account, and (last but not least) a great imagination because many things are very different in the quantum world.

Registration deadline:	30 March 2023
Venue:	online via Zoom
Language:	English
Level:	beginner, intermediate
Tutors:	Jiří Tomčala (IT4Innovations)



More information & registration:
<https://events.it4i.cz/event/164/>



EuroHPC
Joint Undertaking

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