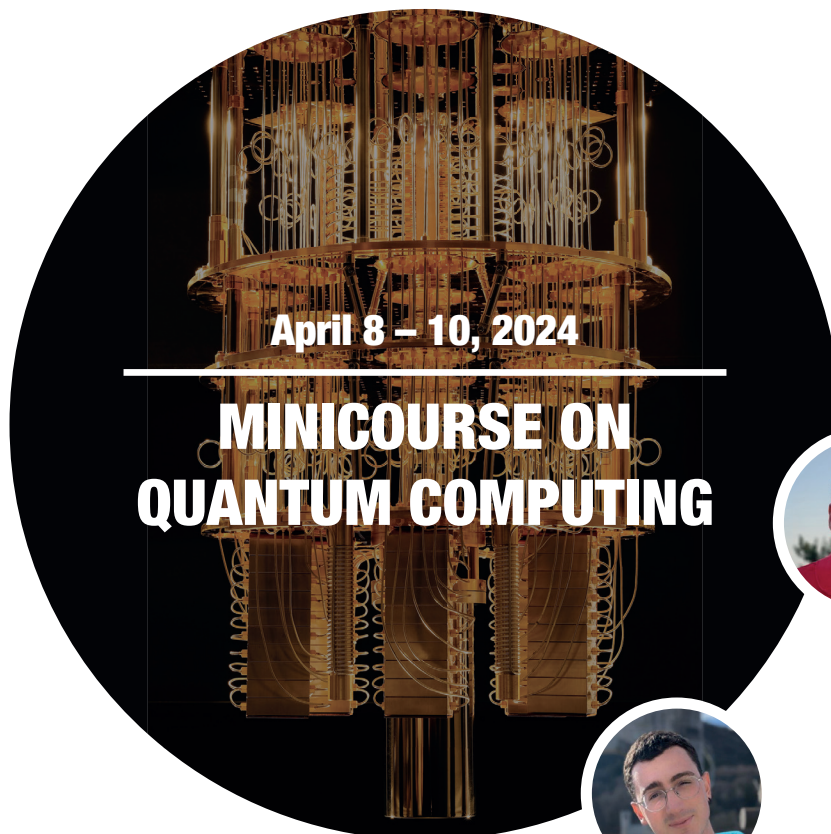




ICTP | International Centre for Theoretical Physics
SAIFR | South American Institute for Fundamental Research

Campus of IFT-UNESP - São Paulo, Brazil



April 8 – 10, 2024

MINICOURSE ON QUANTUM COMPUTING



STEFANO CARRAZZA
 University of Milan, Italy
 and CERN, Switzerland



MATTEO ROBBIATI
 University of Milan, Italy
 and CERN, Switzerland

Quantum computing is a growing field where the information is processed by two-levels quantum states known as qubits. Quantum computers offer an intriguing path for a paradigmatic change of computing in the natural sciences and beyond, with the potential for achieving a so-called quantum advantage, namely a significant (in some cases exponential) speed-up of numerical simulations. The rapid development of hardware devices with various realizations of qubits enables the execution of small scale but representative applications on quantum computers.

In this context, we present a basic introduction to quantum computing paradigm, algorithms and software. The minicourse is organized in lectures and hands-on tutorials using quantum computing software (Qibo).

Basic knowledge of quantum mechanics and computer science may help to appreciate the material presented in the minicourse.

Participants are required to bring their computers with Python (>3.9) installed or access to Google Colab during the tutorial sessions.

There is no registration fee and limited funds are available for local expenses.

Application deadline: March 16, 2024

**Online application and more information:
www.ictp-saifr.org/mqc2024**



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