ICFO

THEORY LECTURE: Noisy Intermediate-Scale Quantum Algorithms

ALBA CERVERA-LIERTA

March 15, 2022 to March 24, 2022
10:00 to 12:00
BLR & Online (Zoom)

Abstract:?
In these lectures, we will review the experimentally feasible algorithmic state-of-the-ar quantum computation, namely the Noisy Intermediate-Scale Quantum algorithms (NISQ) Current quantum computers are composed of a few qubits that perform imperfec operations. The goal of NISQ algorithms is to leverage the limited available resources t perform classically challenging tasks, paving the way towards the long-awaited Fault-Toleran quantum computation while seeking short and medium-term applications. NISQ algorithm present several challenges, both from experimental and theoretical points of view. We wil review some of these challenges and learn the basics and applications of one of the leadin representatives of NISQ: the Variational Quantum Algorithms
Note: no quantum computing experience will be required to follow these lectures. We will start with a brief introduction to quantum computing concepts.

About the trainer
Biography:
Alba Cervera-Lierta is a Senior Researcher at the Barcelona Supercomputing Center (BSC). She earned her PhD in 2019 at the University of Barcelona, where she studied her physics degree and an MSc in particle physics. After her PhD, she moved to the University of Toronto as a postdoctoral fellow at the Alan Aspuru-Guizik group. She works on near-term quantum algorithms and their applications, high-dimensional quantum computation, and artificial intelligence strategies in quantum physics. She is the Quantum Spain project coordinator, an initiative to boost the Spanish quantum computing ecosystem by exploring quantum computing AI applications and by installing a quantum computer at the BSC for public use.

Theory Lectures: 15, 17, 22, 24 March 2022.
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After registering, you will receive a confirmation email containing information about joining the online meeting.
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