



Spring School on Open-Source Tools for Quantum Computing & Simulation

ICFO hosted the first event of the DigiQ project in collaboration with IBM Quantum

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The growing attention towards Quantum Computing and Quantum Simulations in academia and industry has prompted the prioritization of education and training for more students in this field. The theory behind and also the tools needed to solve computational problems is extremely important for students that want to work in this field

On March 29-31, ICFO hosted a 3-day Spring School covering theory and tools to build the core knowledge needed for starting a career in **Quantum Computing & Simulations**. The program included a 2-day hands-on workshop led by researchers from ICFO and IBM Quantum that aimed at introducing students and researchers to several open-source tools, and their use in cutting-edge research. The workshop was followed by a 1-day symposium with researchers from ICFO, IBM Quantum and invited speakers from the wider research community sharing their latest research results.

IBM researchers offered an Introduction to Quantum Computing using Qiskit as well as

specialized lectures on Superconducting Qubits, Dynamic Circuits & error mitigation, and Quantum Optimization. ICFO PhD students and postdocs offered topical lectures on Quantum simulation with cold atoms, Tensor networks, and Quantum machine learning. Highlights from the symposium included a keynote address from **Dario Gil, IBM Senior Vice President and Director of Research**, and talks from leading researchers from IBM, ICFO, CERN, EPFL, BSC, Harvard LMU and Trento.

The school gave students a fantastic opportunity to mix with both local and international peers. 72 students attended the school, selected from over 180 applicants. Students from 14 countries were represented, from across Europe and as far afield as Iran and India, including 42 master's students, 10 undergraduates and PhD students and researchers.

Symposium talks were broadcast online to over 140 participants from 39 countries across 6 continents!

The school was the very first event organized in the context of the [DigiQ - Digitally Enhanced Quantum Technology Master](#), a new European initiative financed through the European Commission's Digital Europe Programme, and was followed by a 2-day [hackathon](#) organized by IBM Quantum, the Quantum Barcelona Community, & ICFO in Barcelona over the weekend of 1-2 April, the first such event to be hosted in Barcelona.



Participants in the Spring School