Rúben André Barreiro

ruben.andre.letra.barreiro@gmail.com

Quantum Optimization (with IBM Quantum)

Teaching Team: Julien Gacon, Dr. Daniel J. Egger,
Dr. Stefan Woerner, Lucía Cuervo Valor

Duration:	24.05.2023 - 06.06.2023
Language:	English
Teaching form:	Online Course

Course Topics:

- Types of optimization problems and advantage of using quantum computing
- Mapping combinatorial optimization problems to Ising Hamiltonians, suitable to solve on annealers and gate-based quantum computers
- Quantum approximate optimization and Grover Adaptive Search
- Implementation aspects of quantum algorithms on superconducting hardware
- Possible applications, challenges, and outlook of quantum optimization

Potsdam, June 6, 2023