

Quantum Information and computing

Marco Ballarin - Beatrice Segalini - Francesco Manzali

Exam assignment

Sent on 14/01/2021

Exercise 1:

Study the Quantum Fourier Transform algorithm.

Exercise 2:

Use two of the available quantum circuits libraries (myQLM, Qiskit, Cirq...) to write a quantum circuit able to perform the QFT.

Exercise 3:

Use a tensor network library (eg TeNPy) to write a MPS TEBD code able to simulate the QFT circuit.

Exercise 4:

Test the codes relative to Exercises 2 and 3 and compare the results you obtain.