Using IBM Q to teach QM

KS - 17/6 2021

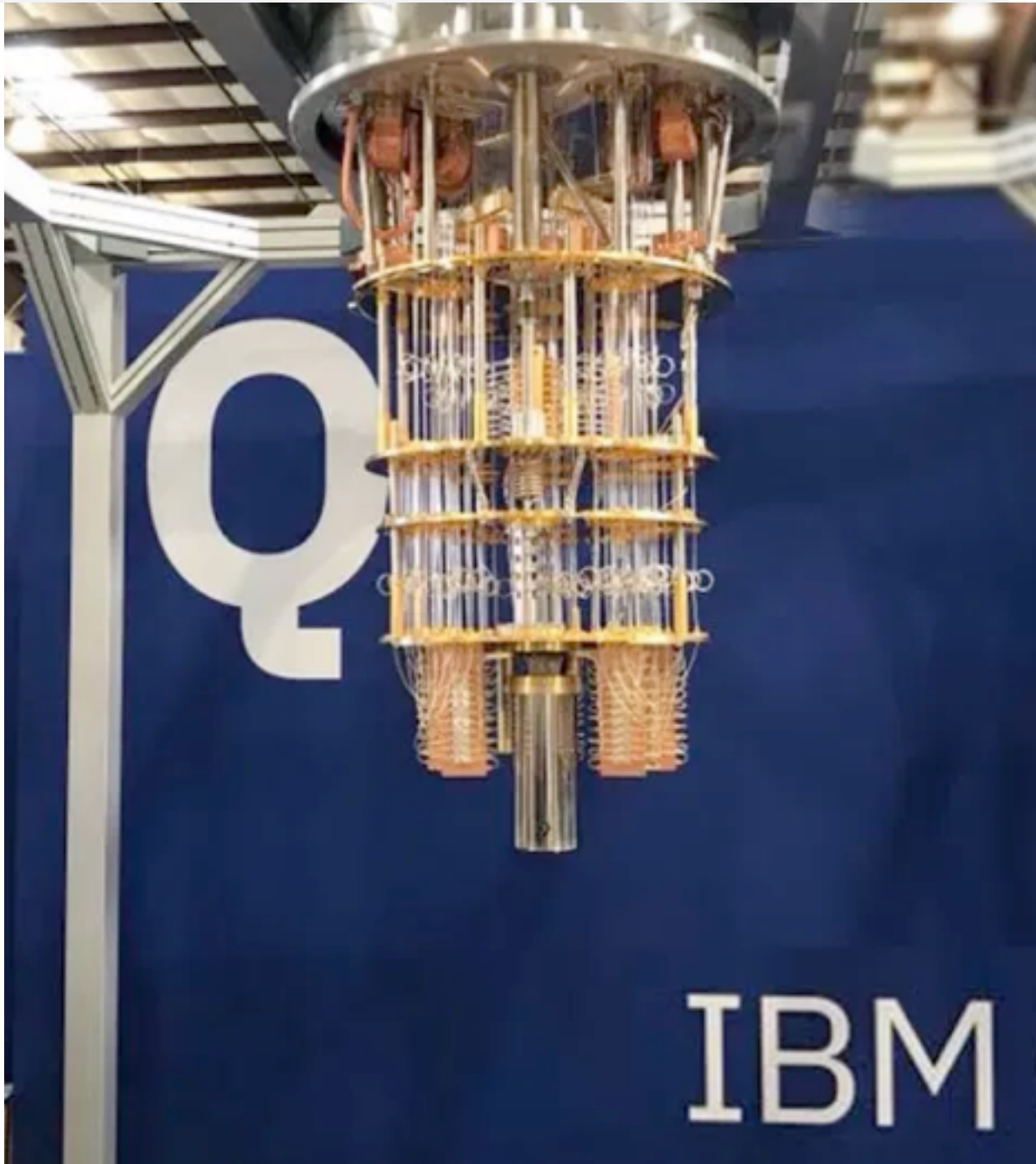
UNIVERSITY OF COPENHAGEN

IBM Q?

A working quantum computer

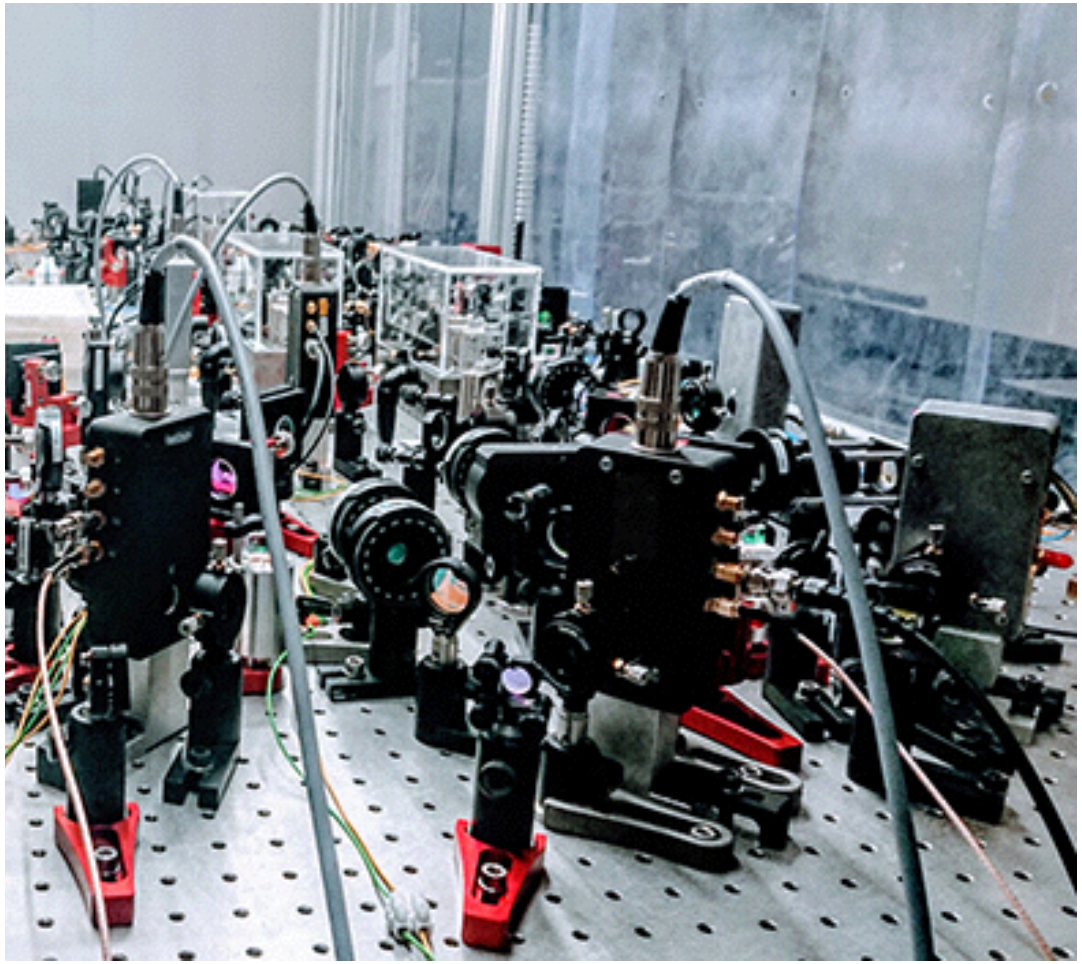
Access on-line

Qiskit /Python code



Why change QM teaching?

- Atomic and nuclear (spectra and decay)
- Solid (many particle)
- Particle (relativistic)
- Quantum computer (measurements)



What, who and which courses?

- Integrate exercises into QM1 (Niels and Kim), QM2 (Anders) and QM3 (Markus A).
- IBM support!

Note:

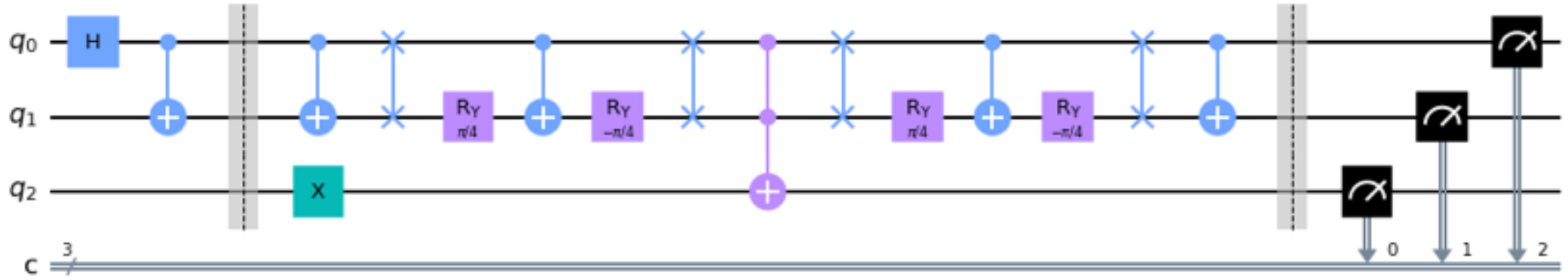
- The aim is not to teach Quantum Information (Anders does this in QI course)

Aim: Better undestanding of

- Hilbert space
- Superpositions
- QM measurements
- QM noise VS Exp. noise

Aim: Experience with

- Python from DatF
- Quantum technology
- Remote control of a state of the art experiment



Comments and suggestions are welcome!

Demonstration of IBM Q over lunch!