

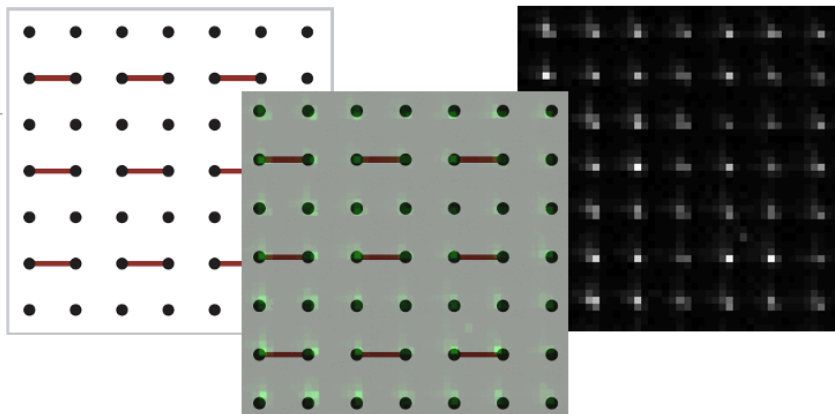
## ParityQC and Pasqal partner to build the first fully parallelizable quantum computer

Palaiseau, Innsbruck, October 23<sup>rd</sup>, 2020

In the race to build highly efficient Quantum Processors, Pasqal is developing neutral atom-based devices that provide both simulation and computation capabilities with hundreds of highly connected qubits and a broad set of native quantum gates. Thanks to their versatility, the performances of the devices can be significantly improved by adapting the operations and the hardware resources to the desired application.

Designing efficient optimization procedures is the core expertise of the Austrian spin-off ParityQC. The team developed an architecture and algorithms that allow to reduce complexity as well as enable parallelizability and tackle the most computationally intensive problems. All advantages are accessible via their ParityOS operating system.

The two companies decided to join their efforts to implement the ParityQC architecture; which is particularly well suited for the Pasqal neutral atom platform. They paved the way for a 3 years collaboration that will lead to major breakthroughs in the field of quantum optimization, solving relevant industrial use-cases.



*Mapping of the ParityQC architecture (left) onto Pasqal's array of atoms (right)*

**Magdalena Hauser & Wolfgang Lechner, CEO of ParityQC:** *“Parallelizability will be a crucial next step towards scalability of quantum computers. We believe that combining Pasqal's highly developed hardware platform with our architecture is a realistic path towards quantum advantage”.*

**Georges-Olivier Reymond, CEO of Pasqal:** *“Co-developing hardware with quantum algorithms will speed up the demonstration of quantum advantage in solving real world problems. Leveraging the ParityQC design on Pasqal's 200 qubits processors will be key to reach the market”.*

**About Parity QC:**

ParityQC was founded in January 2020 as a spin-off from the University of Innsbruck. ParityQC is a quantum architecture company which develops blueprints for quantum computers to solve optimization problems as well as the appertaining software called ParityOS. It translates any optimization problem to optimized and parallelized quantum algorithms.

[www.parityqc.com](http://www.parityqc.com)

**About Pasqal:**

Pasqal is building quantum processors out of neutral atoms ordered in large 2D and 3D arrays. Pasqal's purpose is to bring practical quantum advantage to its customers in particular in the fields of quantum simulation and optimization. Pasqal is backed by Quantonation, leading early stage venture capital fund focusing on Quantum Technologies and Deep Tech leader TPY Capital.

[www.pasqal.io](http://www.pasqal.io)