

PhD position in Quantum Technologies

We have PhD positions available for exceptional students to join our team. Our research is multifaceted but all oriented towards the development of quantum technologies.

1. Quantum Sensors

We have developed an atomic interferometer to measure local gravity. This platform will be extended to be applicable for navigation. Meaning we will realize an inertial navigation system based on atomic matter waves. To achieve this goal theory and experiment have to work hand in hand, and this role requires both understanding and developing further the theoretical concepts as well as the experimental realization.

2. Quantum Computing

Quantum Computing will have a tremendous impact on society. However there are still hard challenges to overcome to scale up current realizations. In our lab we are focusing on superconducting qubits and have realized a 10-qubit processor which serves as a testbed to address these challenges. In this project you can help to overcome the bottleneck of current technology to pave the way for future quantum computing.

3. Atomtronics

Today most quantum circuits are based on superconducting materials, exploiting the wave properties of Cooper pairs. In this project we interchange the electrons with atomic matter waves and the circuit with a light pattern. At very cold temperatures around nK the wave properties of atomic matter become dominant. We are able to make functional circuits out of light fields for this atomic matter waves. This gives us the possibility to develop quantum circuits which are out of reach for current technology based on superconducting structures.

If you are interested, please check out our group webpage <https://www.quantumschmantum.net/>