

EXPERIMENTAL PHD POSITION: Rydberg atomtronics

An experimental Phd position (3 years) on the control of quantum correlations and phase coherence in systems of cold Rydberg atoms is available. The position is part of the research grant '*Rydberg atomtronics*', recently funded by the *Julian Schwinger Foundation* and coordinated by Luigi Amico and Oliver Morsch. The project will be investigating Rydberg atoms as a platform to develop atomtronic circuits with specific operating conditions and performances both to explore basic science and applications to quantum technology.

In the experimental part of the project in Pisa, we are planning to upgrade our existing rubidium Rydberg setup with a dipole trap array and high-resolution imaging, which the PhD candidate will help to design and build. On that setup, we will then study excitation transport in different geometries, also using engineered dissipation.

Ideal background: Master's degree in physics; some lab experience in quantum optics / cold atoms

Employment will be with the CNR (National Research Council), whereas the PhD will be awarded by the University of Pisa. Some coursework will be required in the first year of the PhD.

Interested candidates are invited to contact Oliver Morsch (morsch@df.unipi.it) for further information. The official announcement (Bando ASS INO 044 2022 PI) and instructions for how to apply can be found at https://www.ino.cnr.it/?page_id=15885&lang=it&p=a718.

DEADLINE FOR APPLICATIONS: 9 December 2022.