In our research group **"Experimental Quantum Optics and Quantum Information"** at the Johannes Gutenberg-University Mainz we are investigating several scientific questions in the fields of quantum optics and quantum information science with cold, neutral atoms. This contains experiments on long-range interactions, tests on the equivalence principle or the investigation of strong atomic interactions for quantum information processing.

We are offering a position for a

Ph.D. or Postdoc

Development of Laser Systems for Space Applications

This position is embedded in the QUANTUS-collaboration („Quantengase unter Schwerelosigkeit") which is a collaborative project funded by the German space agency DLR aiming at investigating fundamental physics by means of matter wave interferometry with atomic quantum gases in micro-gravity environments (drop tower, sounding rocket missions, ISS, …). To this end we in Mainz are developing several groundbreaking technologies for experiments with cold Rubidium and Potassium atoms and Bose-Einstein condensates.

We are seeking a candidate for Ph.D. or Postdoc from now on to work on the sounding rocket missions MAIUS 2 and 3 – matter wave interferometry in weightlessness resp. the DLR-NASA-Project BECCAL.

Tasks:

- Development of miniaturized laser systems for frequency stabilization as well as switching and distribution of the laser light based on the glass ceramic Zerodur
- Support and participation in the integration of the different subsystems (e.g. electronics, vacuum system, laser system) at the sites of our project partners, and support and participation in the scientific measurements
- All working steps have to be organized in close collaboration with the project partners

Requirements:

- Excellent university degree (Master of Science or equivalent) in physics or related fields
- Experience in the field of experimental laser physics and optics and/or the physics of ultra cold quantum gases would be favorable
- High mobility and the willingness to frequently travel to the collaboration partners
- Hands-on attitude

For more information, don’t hesitate to contact Prof. Dr. Patrick Windpassinger

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