



# Ph.D. Position

## Light-induced correlations in dense atomic media

**QuCoLiMa** (“**Quantum Cooperativity of Light and Matter**”) is a Collaborative Research Centre Transregio (TRR 306) funded by the German Research Foundation (DFG). It intends to explore the distinctive traits of quantum cooperativity within a large variety of quantum platforms at the intersection of quantum optics and condensed matter.

The project **Light-induced correlations in dense atomic media** (C02), carried out at our research group “Experimental Quantum Optics and Quantum Information”, investigates the interplay of light-induced and magnetic interactions in light-scattering experiments using dysprosium atoms, which feature a large magnetic dipole moment - see [www.qucolima.de](http://www.qucolima.de) for details.

We are seeking a candidate for a Ph.D. with possible starting date as of now to participate in this project. The prospective student will become member of the Integrated Research Training Group of TRR 306.

### Tasks:

- Setting up laser systems to create laser cooled, dense atomic samples and perform light-scattering experiments.
- Studying spatial, temporal and spectral effects on cooperativity in dense atomic samples.
- Developing magnetic field systems to control the field around the prepared samples.

### Requirements:

- University degree (Master of Science or equivalent) in physics or related fields.
- Experience in the field of experimental laser physics, quantum optics or cold quantum gases would be favorable.
- Dedication for experimental physics and strong interest in independent working

Please send your application including the common documents (cover letter, curriculum vitae and certifications) electronically to Prof. Dr. Patrick Windpassinger ([windpass@uni-mainz.de](mailto:windpass@uni-mainz.de)). In case of any questions, please do not hesitate to contact us.

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