

Job ID: IQOQIVIE005PD221

The Institute for Quantum Optics and Quantum Information Vienna ([IQOQI-Vienna](https://www.iqqi-vienna.at)) of the Austrian Academy of Sciences ([OeAW](https://www.oeaw.ac.at)), Austria's leading non-university research and science institution, is offering a

POSTDOC POSITION (F*M)

(full-time, 40h per week)

in the form of a temporary employment for 12 months with a possible extension.

The advertised position will focus on research and project co-supervision in the context of the potential future space mission MAQRO aiming to test the foundations of quantum physics in deep space.

The research will be central to the research projects "QuantumShield" and "XHVpressure" funded by the Austrian Research Promotion Agency (FFG) and led by Rainer Kaltenbaek (Ursin Group) at the IQOQI-Vienna.

For more information of the research activities of the group, see [Ursin Group](#)

Your tasks:

- Optimizing the (thermal) payload design for the MAQRO mission proposal in the course of the on-going research project QuantumShield and co-supervising a master student who has been implementing a finite-element model of the thermal payload to optimize the thermal shielding and passive radiative cooling approach of MAQRO
- Extending the finite-element model to include additional active cooling of the payload
- Detailed re-evaluation of the vacuum required to achieve the scientific objectives of MAQRO in the course of the research project XHVpressure
- Estimation of the expected vacuum conditions achievable
- Theoretically and experimentally investigating methods of measuring XHV pressures using optically trapped particles
- Roadmap for technology and payload development towards until a potential launch of MAQRO
- Development of concepts for proof-of-principle experiments on ground and in space

Many of these points have been at least partially addressed in earlier technical and feasibility studies. A central goal will be to further boost these efforts and to address some critical challenges that will need to be addressed before an adoption of the mission.

Your profile:

- Successful completion of a PhD in physics
- A high level of creativity and independent thinking
- Experience in quantum optics or quantum optomechanics
- Interest in testing the foundations of physics

Interested candidates are invited to submit a detailed curriculum vitae including list of publications, a short research statement, PhD certificate and the electronic (email) contact details of at least two potential referees via email to Assoc. Prof. Dr. Rainer Kaltenbaek - rainer.kaltenbaek@oeaw.ac.at (mentioning Job ID: IQOQIVIE005PD221) **no later than February 28, 2021.**

We offer an annual gross salary of € 54.453,00 before taxes based on the salary scheme of the Austrian Science Fund ([FWF](https://www.fwf.ac.at)).

The Austrian Academy of Sciences (OeAW) pursues a non-discriminatory employment policy and values equal opportunities, as well as diversity. The OeAW lays special emphasis on increasing the number of women in senior and in academic positions. Given equal qualifications, preference will be given to female applicants.