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The **Vienna Center for Quantum Science and Technology**  
(**VCQ**) invites you to a

# COLLOQUIUM TALK

by

**Daniele FACCIO**

*(University of Glasgow)*

## *Photon pair correlations: from imaging to spacetime entanglement*

Entangled photon pairs are the workhorse for most quantum photonics research labs. Compared to other quantum technologies, photon pairs are easy to generate, they are cheap, they can be plentiful, they are relatively easy to detect and the techniques developed to detect them find applications in many other areas ranging from lidar to new computational imaging approaches.

I will give a brief overview of some of our work in these fields, starting from photon-pair inspired imaging techniques that rely on the ability to efficiently detect the spatial correlations between entangled photon pairs. Examples are a new form of quantum holography and quantum microscopy based on Hong-Ou-Mandel interference, i.e. the coalescence of photons at a beamsplitter.

I will then show how we are using HOM interference to investigate the interplay of non-inertial motion, i.e. rotation and entanglement.

**Monday, 30<sup>th</sup> May 2022,**  
**17:15 get-together with coffee and snacks**

Main Lecture Hall at TU Wien, Atominstytut, Stadionallee 2, 1020 Vienna

The seminar talk will be preceded by a VCQ Student talk at 17:45 by

**Lukas Rachbauer**  
*TU Wien*

**"Fisher Information for Optimal Sensing and Particle Manipulation"**

**Host: Stefan Rotter**

for further information and the link to zoom please visit  
[vcq.quantum.at/colloquium-ss-22](https://vcq.quantum.at/colloquium-ss-22)