



QOQI needs you for High Throughput!

Dive into the field of correlation functions and intensity interferometry by characterizing our new high throughput system



Apply now for a thesis or project

The project:
Interest in Hanbury-Brown and Twiss (HBT) interferometry has recently resurged, where for small telescopes (mirror diameters below 2m) single photon detection is used. However, the saturation count rate of Hybrid Photon Detectors (HPDs) of about 10MHz can already be reached for bright stars at a 1m telescope. Under these conditions 50% of potential photon events are lost due to the dead time of the detectors, diminishing the Signal to Noise Ratio (SNR) of the measurement substantially. We are thus developing our own single photon detection system enabling count rates of 100MHz by use of micro-channel plate photomultiplier tubes. The single photon events are digitized with tailored discrimination electronics and a self-developed Tapped-Delay-Line Time-To-Digital-Converter (TDL TDC) to handle the extremely high count rate of the detector.

- ⚠ Assemble an optical setup to test our high throughput system and shoot ultra short laser pulses onto our detectors
 - ⚠ Evaluate the highest single photon counting rate histograms ever measured
 - ⚠ Get in touch with our top-notch single photon counting detectors and hardware
- 👩 You already gathered some basic knowledge of optics during your studies and know a programming language (e.g Python) that you would like to improve?
- 👩 You are interested in electronics, detectors and hardware and always wanted to know what it is like to work in an optics lab?
- 👩 Then QOQI needs you for our High Throughput project. No matter if you are interested in a bachelor thesis or a research project. Feel free to contact us!

