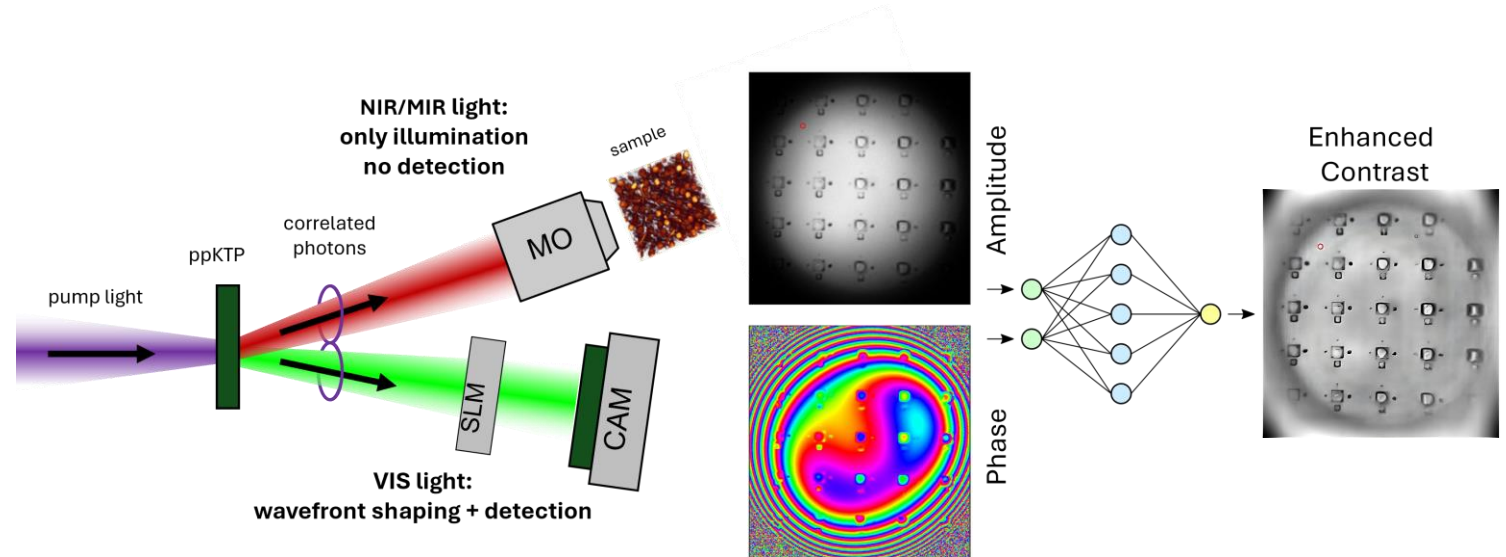


Using Neural Networks to Enhance Contrast in Amplitude and Phase Quantum Images

Motivation While quantum imaging with undetected light has high potential in terms of measurement accuracy and available wavelengths, it lacks the ability to compensate losses of the probing photons which can lead to reduced imaging contrast. This decrease in contrast might be mitigated by a combination of amplitude and phase information and an AI-based pattern recognition.

As part of this work, simulated as well as experimental quantum microscope data is to be analyzed to find out the most suitable training scenario for an AI-based contrast enhancement. The aim is to increase the Quantumimaging contrast while conserving physical information.



- Tasks**
- Analysis of experimental data sets
 - Simulation of amplitude and phase data sets
 - Construction of AI-network and training
 - Contrast evaluation and discussion