

# Experimental aspects of quantum inspired super-resolution protocols

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## Abstract

A novel approach to imaging based on quantum Fisher information defines an optimal measurement as projections to nontrivial space modes instead of camera pixels. Though finding mathematical description of such modes is given by the theory of information, practical realization in the laboratory is still challenging.

The lecture will address problems of preparing advanced measuring protocols with the help of spatial light modulators, both phase and amplitude ones. Using phase modulations together with the free space propagation is practical realization of arbitrary unitary transformation with low losses. On the other hand, this kind of setup is very sensitive to any kind of perturbation from the nominal laboratory system. Amplitude modulation based on digital holography principle is more robust approach but possessing high losses.

Problems of cross talks, bias and computation with number of resources will be discuss too during the talk.