

ERATO Meeting Sept.7.2015

Coherent noise suppression and its applications

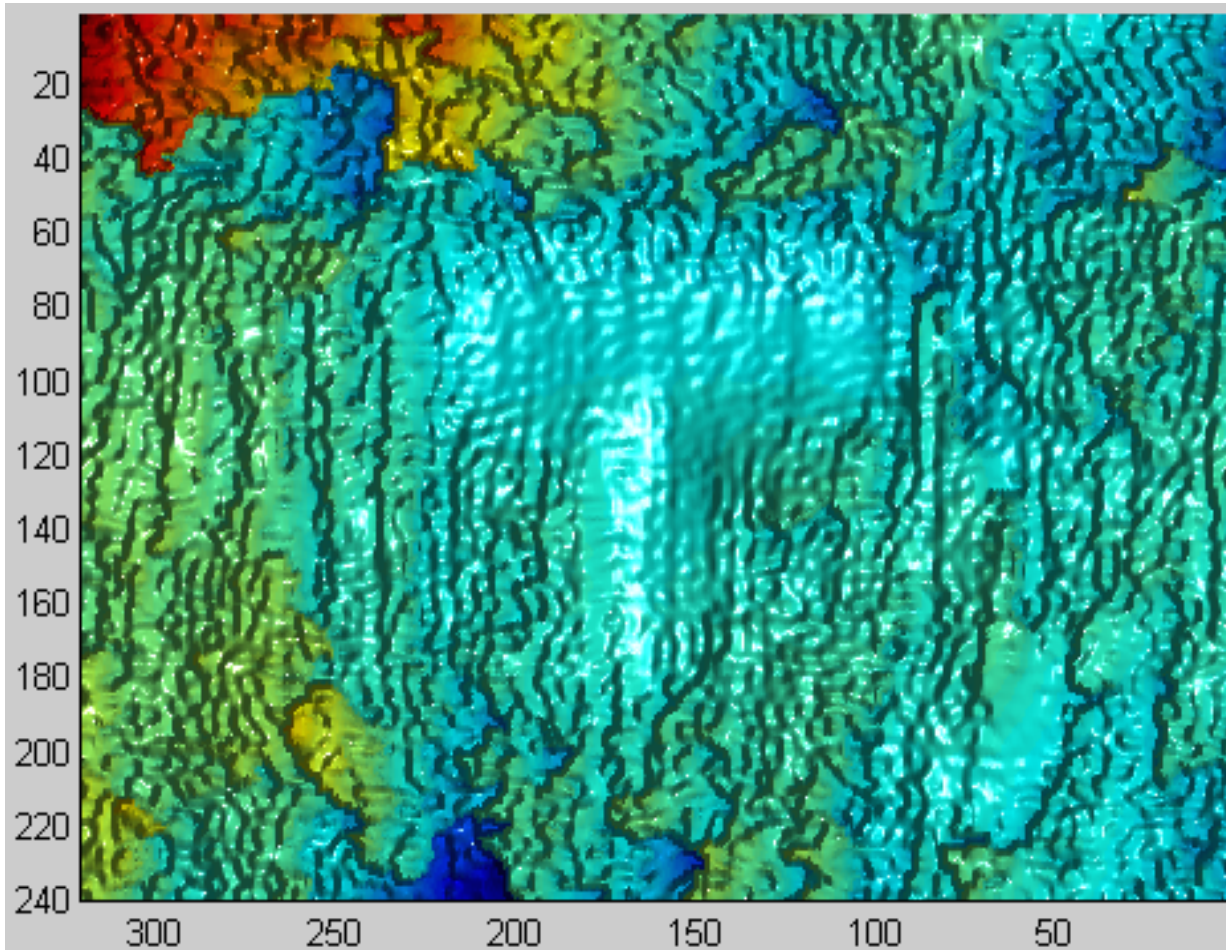
By

Dahi.G.Abdelsalam

High brightness image synthesis for off-axis low coherent digital holographic microscopy

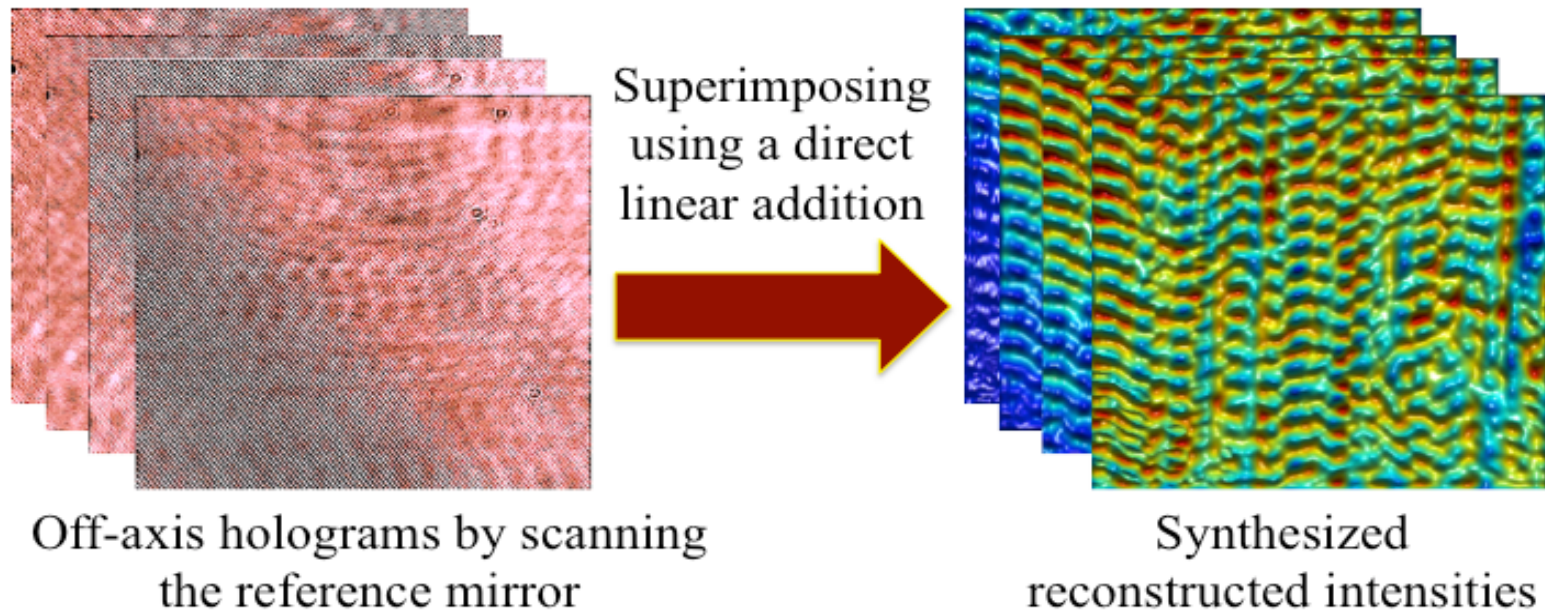
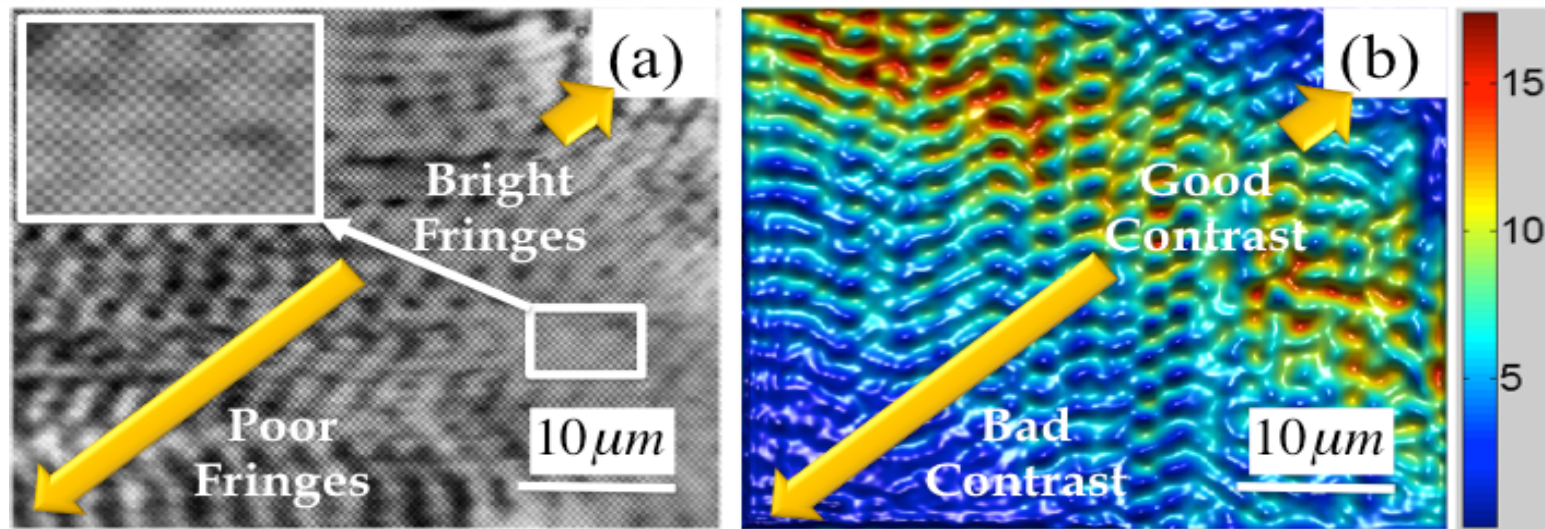
THZ phase contrast image

Synthesis technique

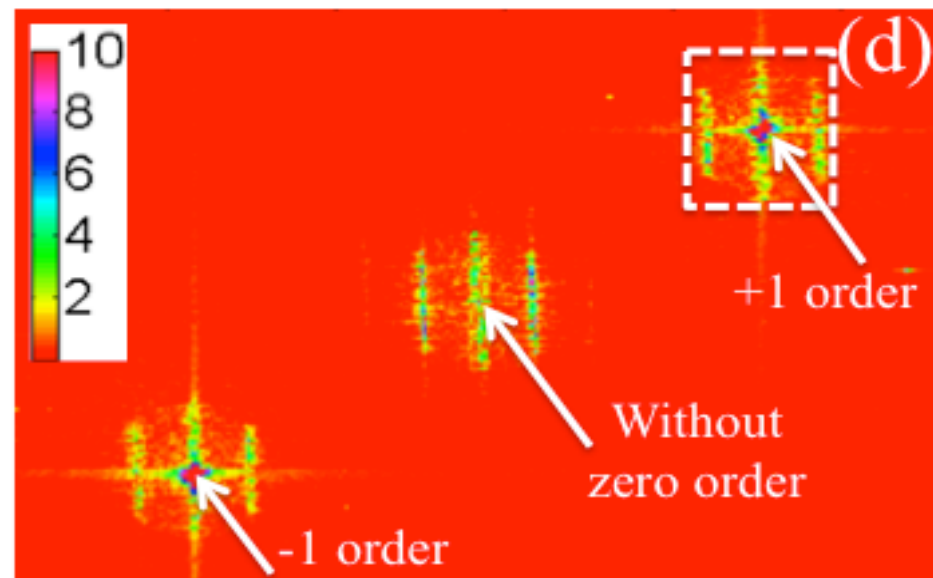
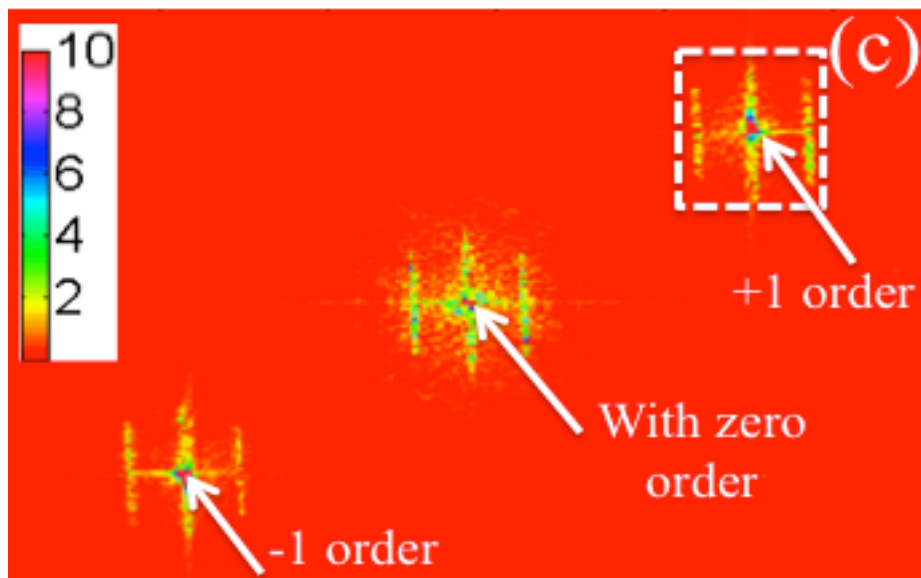
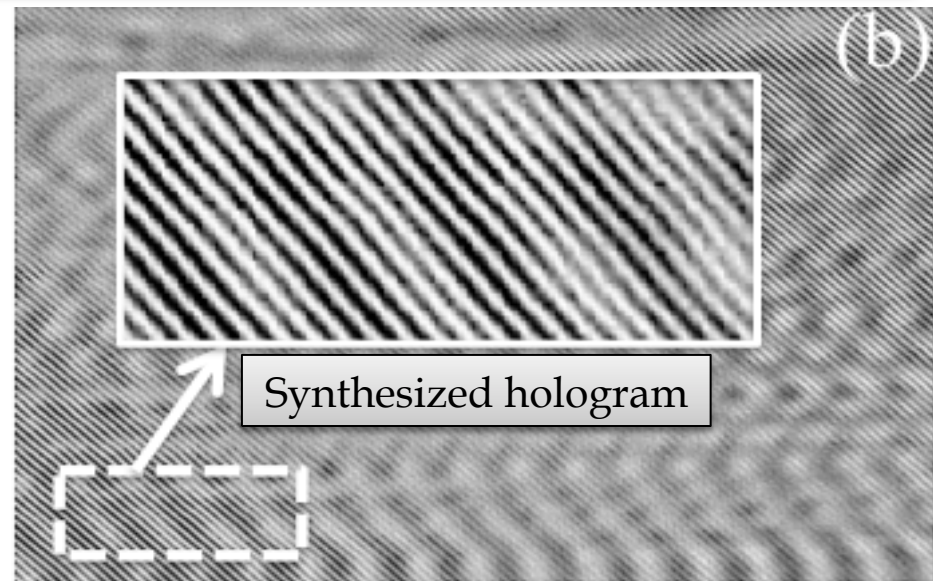
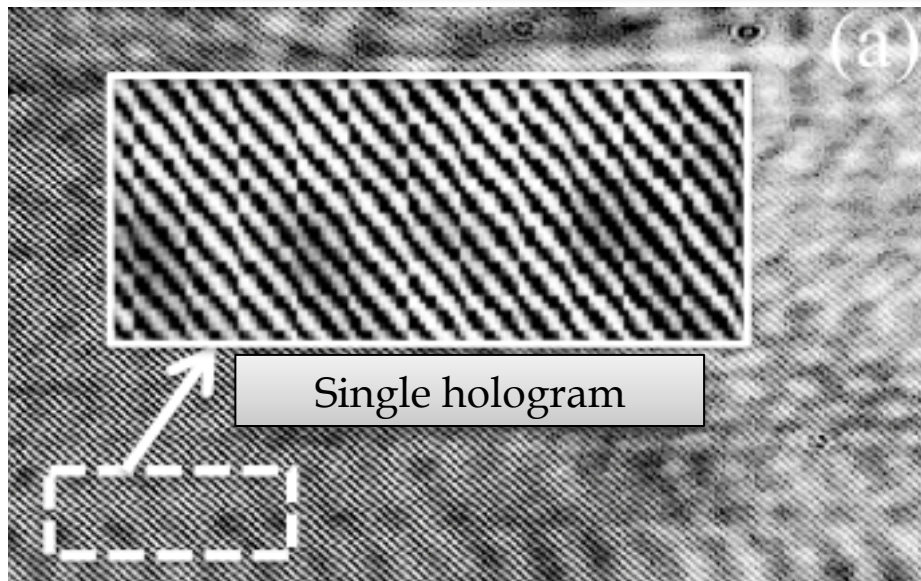


Adaptive Optics

High brightness image synthesis for off-axis low coherent digital holographic microscopy

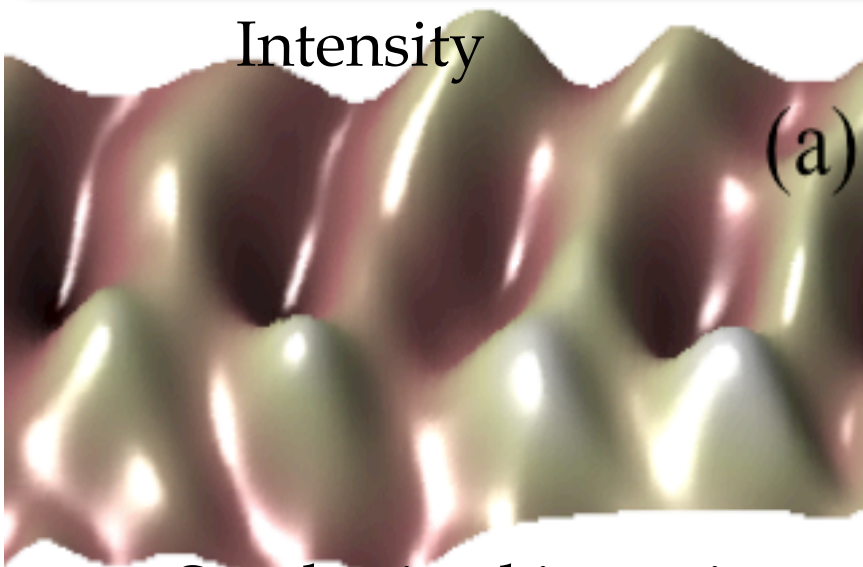


High brightness image synthesis for off-axis low coherent digital holographic microscopy

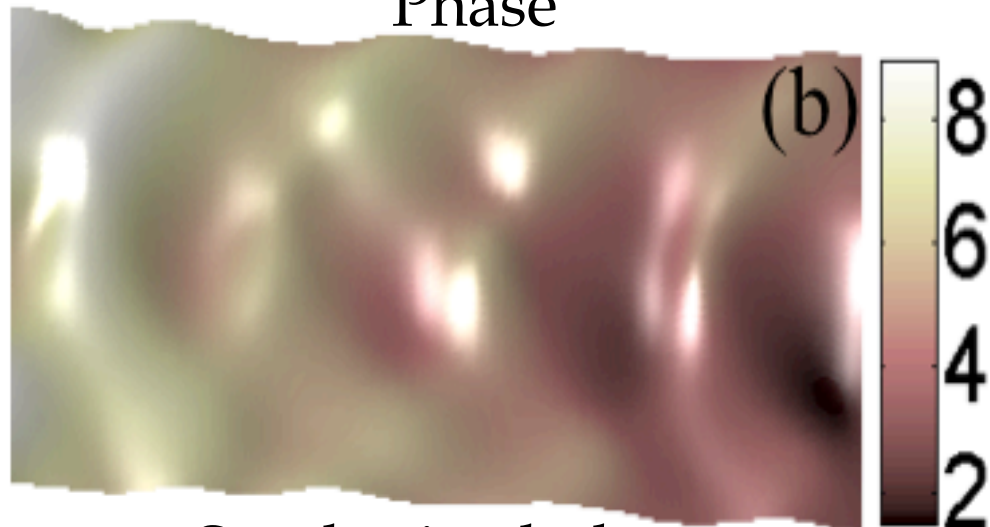


High brightness image synthesis for off-axis low coherent digital holographic microscopy

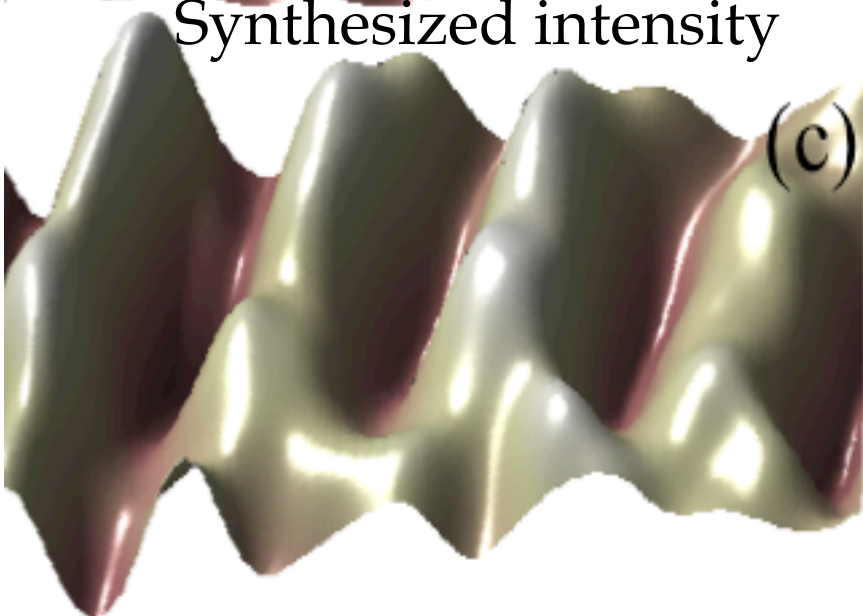
Intensity



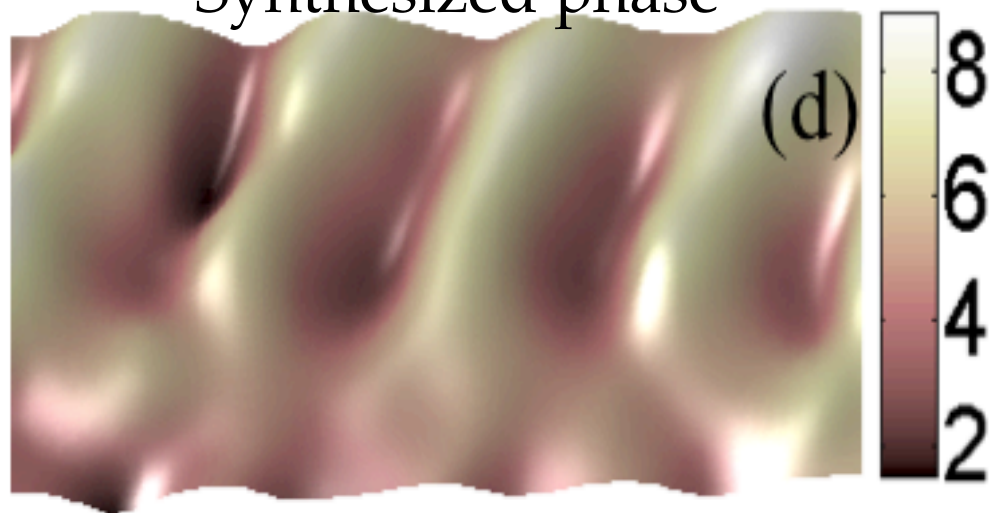
Phase



Synthesized intensity

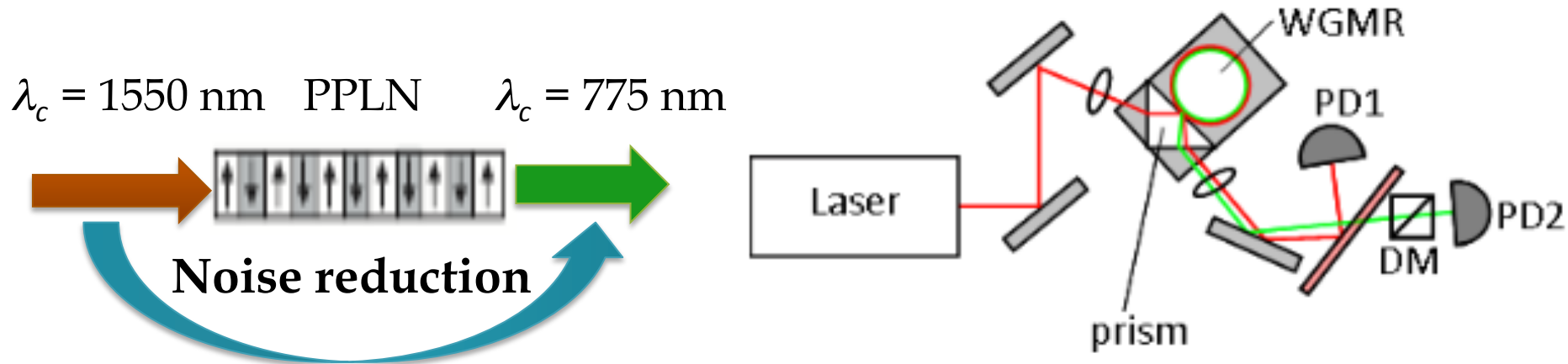


Synthesized phase



Future work: Quantifying the coherent noise of SHG beam

The variance of a coherent mode is reduced by a factor of 9



Bright squeezed light via second harmonic generation in a whispering-gallery mode resonator

Abstract:

We investigate the conditions necessary for bright squeezed light generation through second harmonic generation inside a crystalline whispering gallery mode resonator. We show that the variance of a coherent mode can be reduced by a factor of 9 due to low loss through a nonlinear medium. This results in a one-step process that can generate efficient bright squeeze light at a desired wavelength.

Thank you for listening.
Any questions or suggestions?