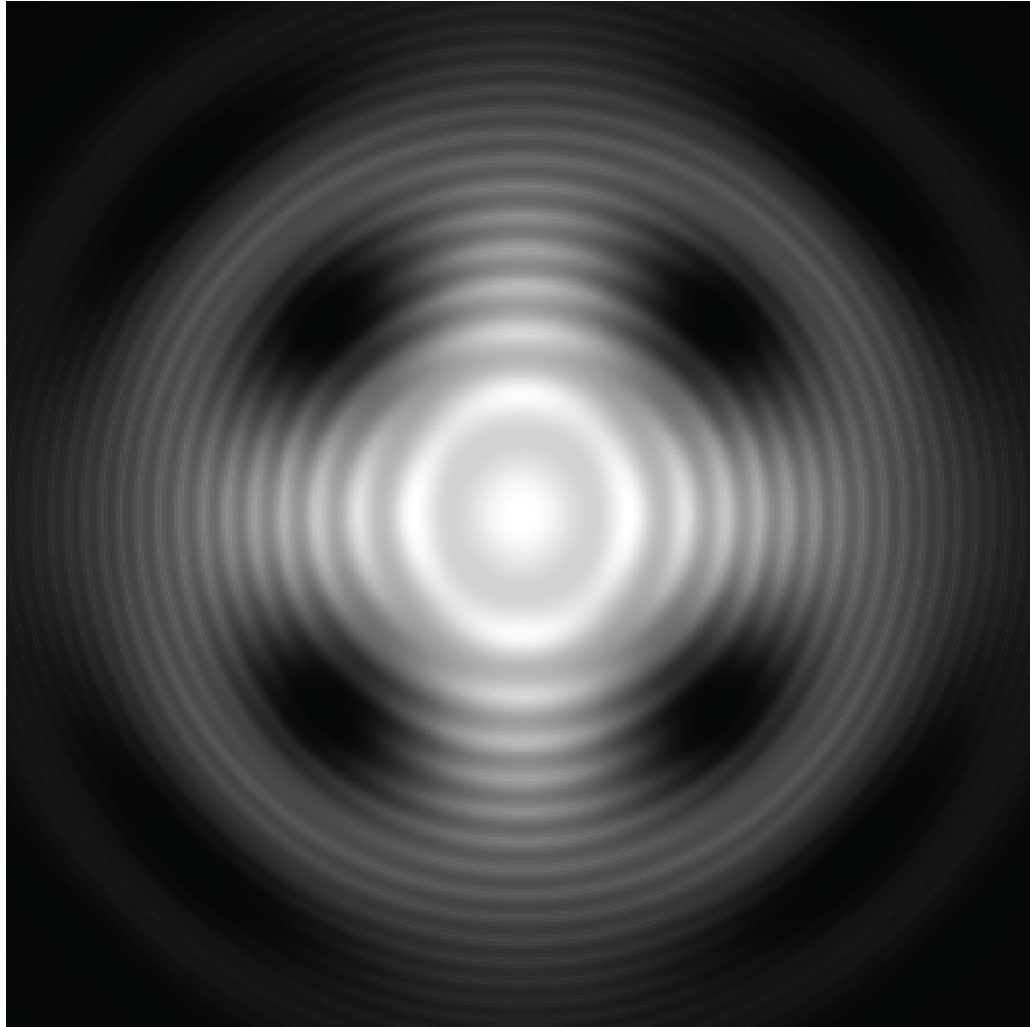


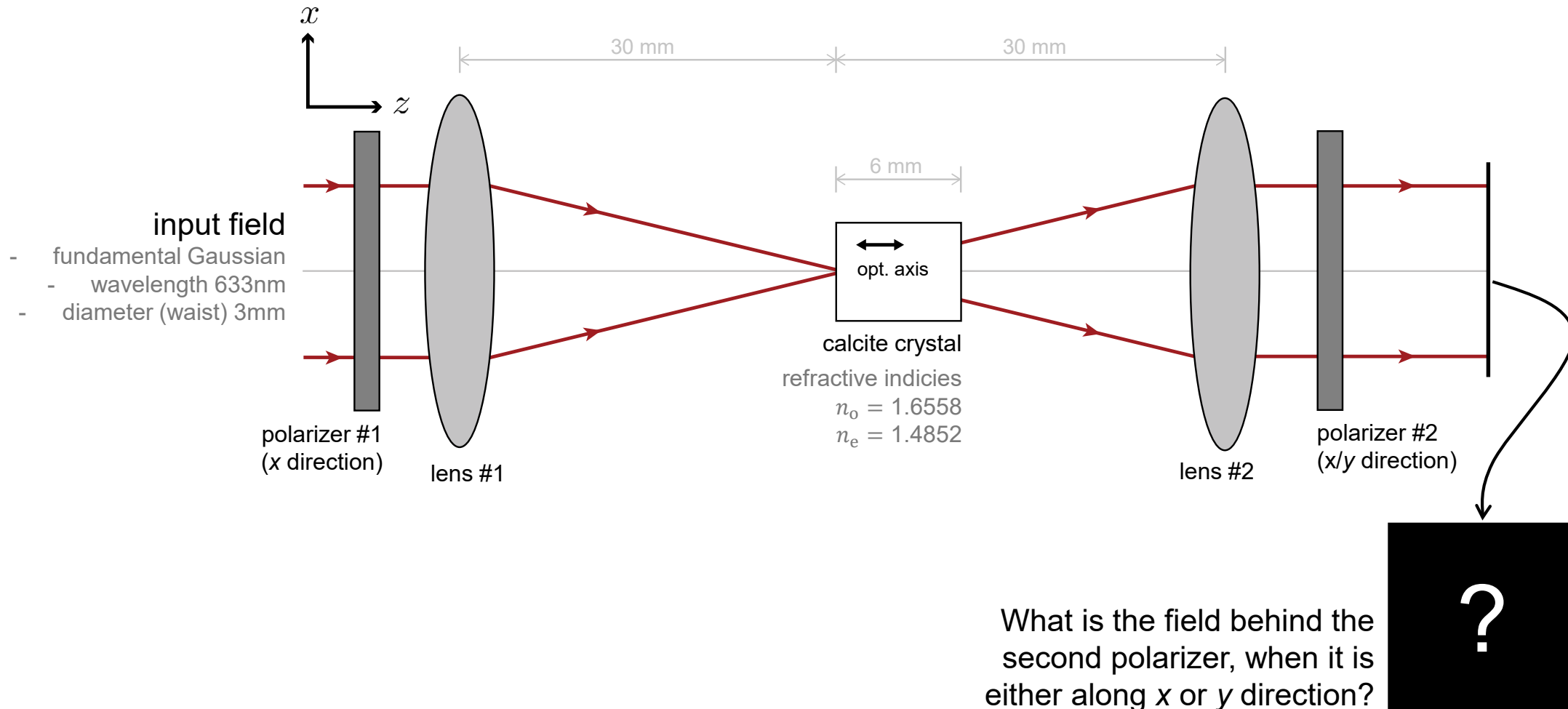
# **Polarization Conversion in Uniaxial Crystals**

# Abstract

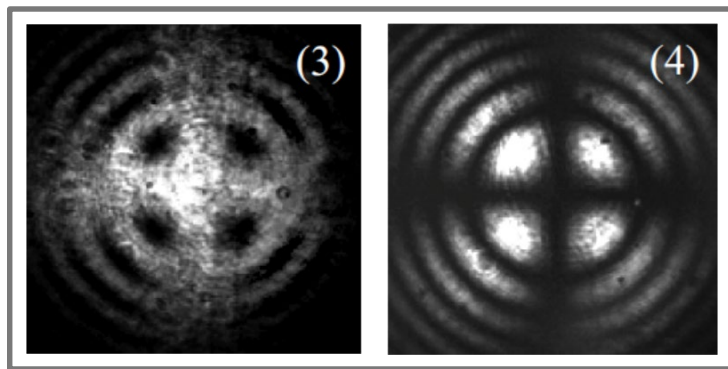
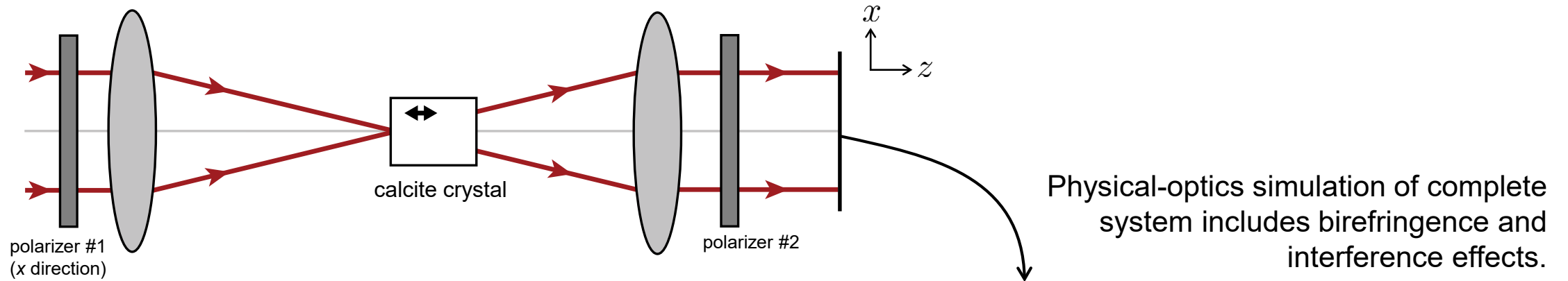


When a linearly polarized beam is focused and then propagated through a uniaxial crystal, even when along the optic axis, complicated conversions may take place between different polarization components. Such an effect can be utilized for e.g. generation of optical vortices. Taking calcite crystal as an example, the conversion of polarization in uniaxial crystal is demonstrated in VirtualLab Fusion. The optical vortices generated within the process is visualized.

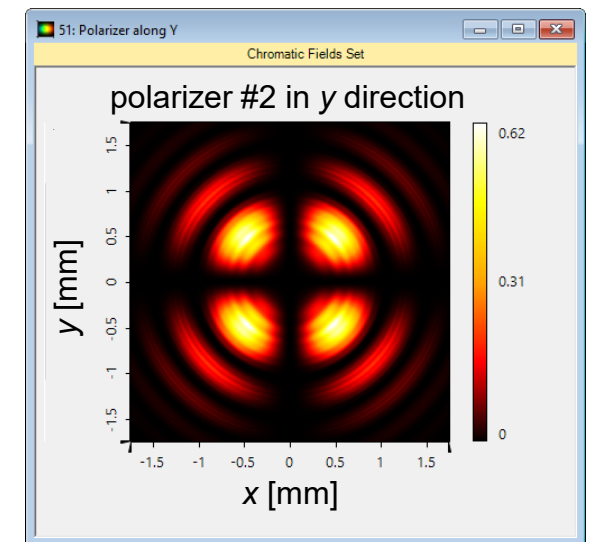
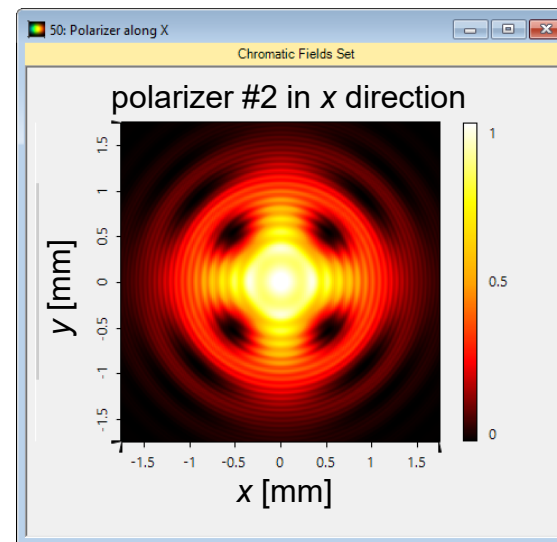
# Modeling Task



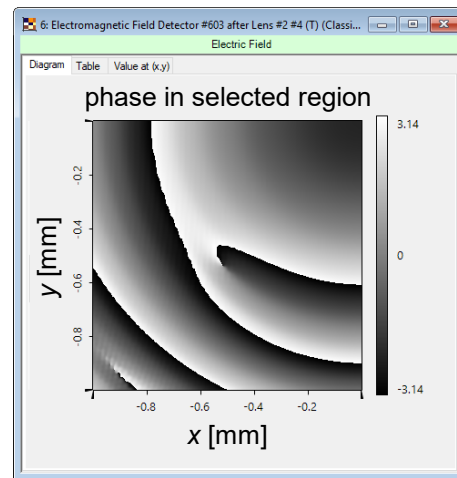
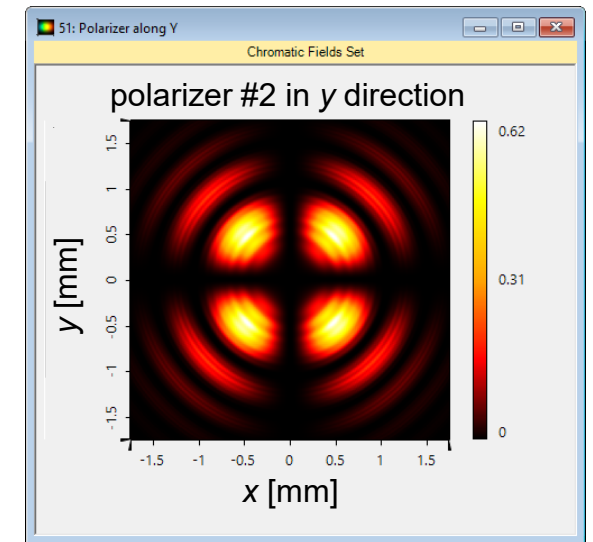
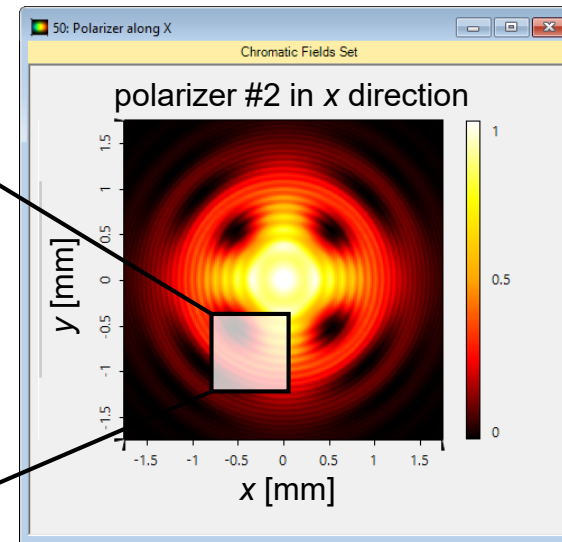
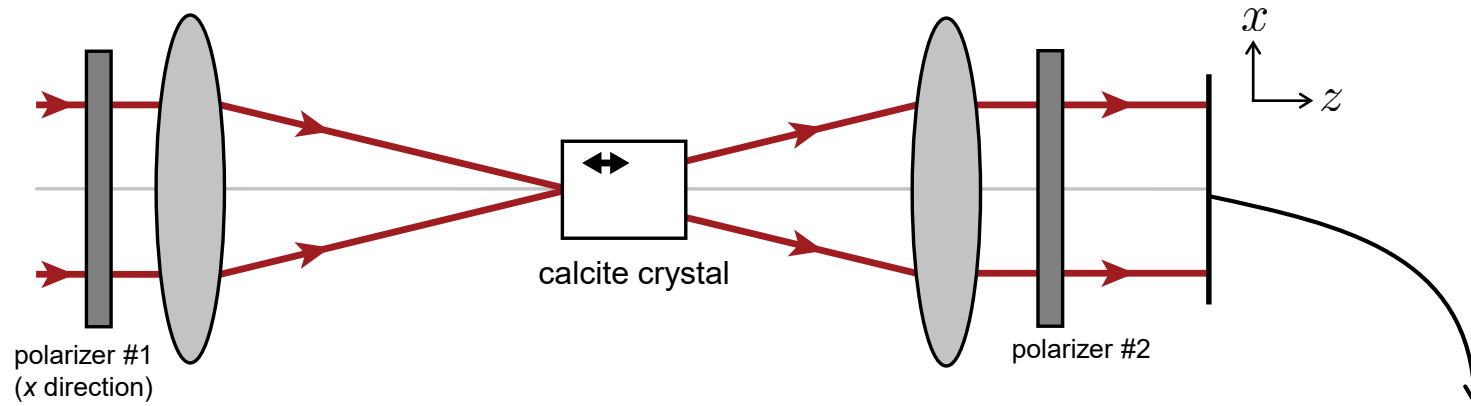
# Results



Experimental measurements from Y. Izdebskaya *et al.*, *Opt. Express* **17**, 18196-18208 (2009)



# Results



Visualization of phase distribution reveals a phase dislocation / vortex phase.

# Document Information

title	Polarization Conversion in Uniaxial Crystals
document code	0027
version	2.0
toolbox(es)	Starter Toolbox
VL version used for simulations	7.4.0.41
category	Application Use Case
further reading	<ul style="list-style-type: none"><li>- <a href="#">Conical Refraction in Biaxial Crystals</a></li><li>- <a href="#">Stress-induced Birefringence in Laser Crystals</a></li></ul>