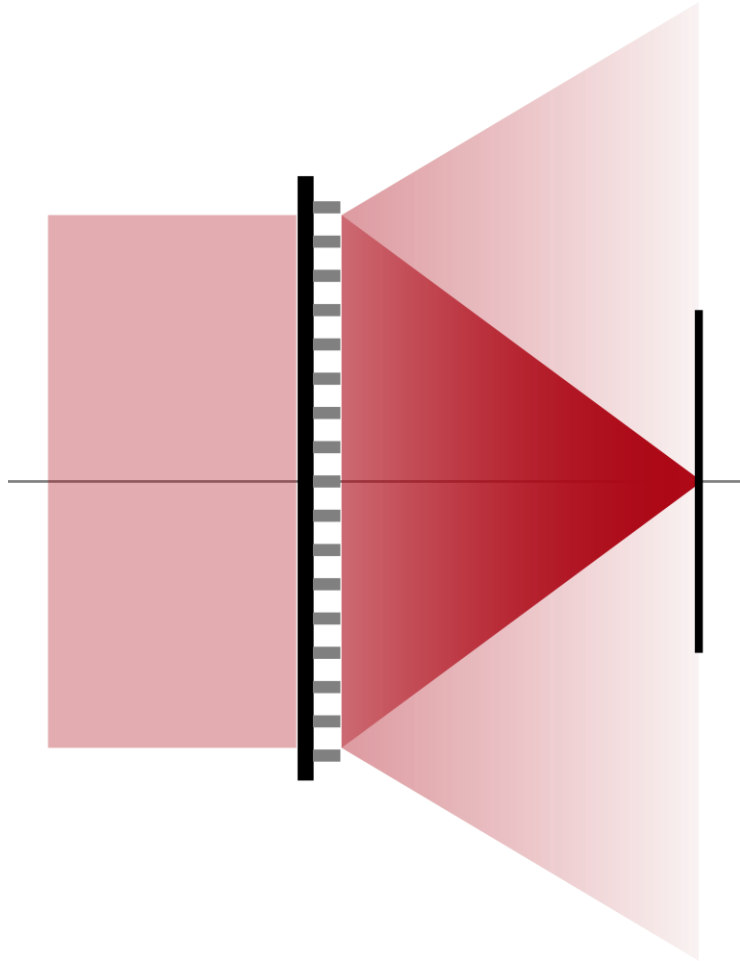


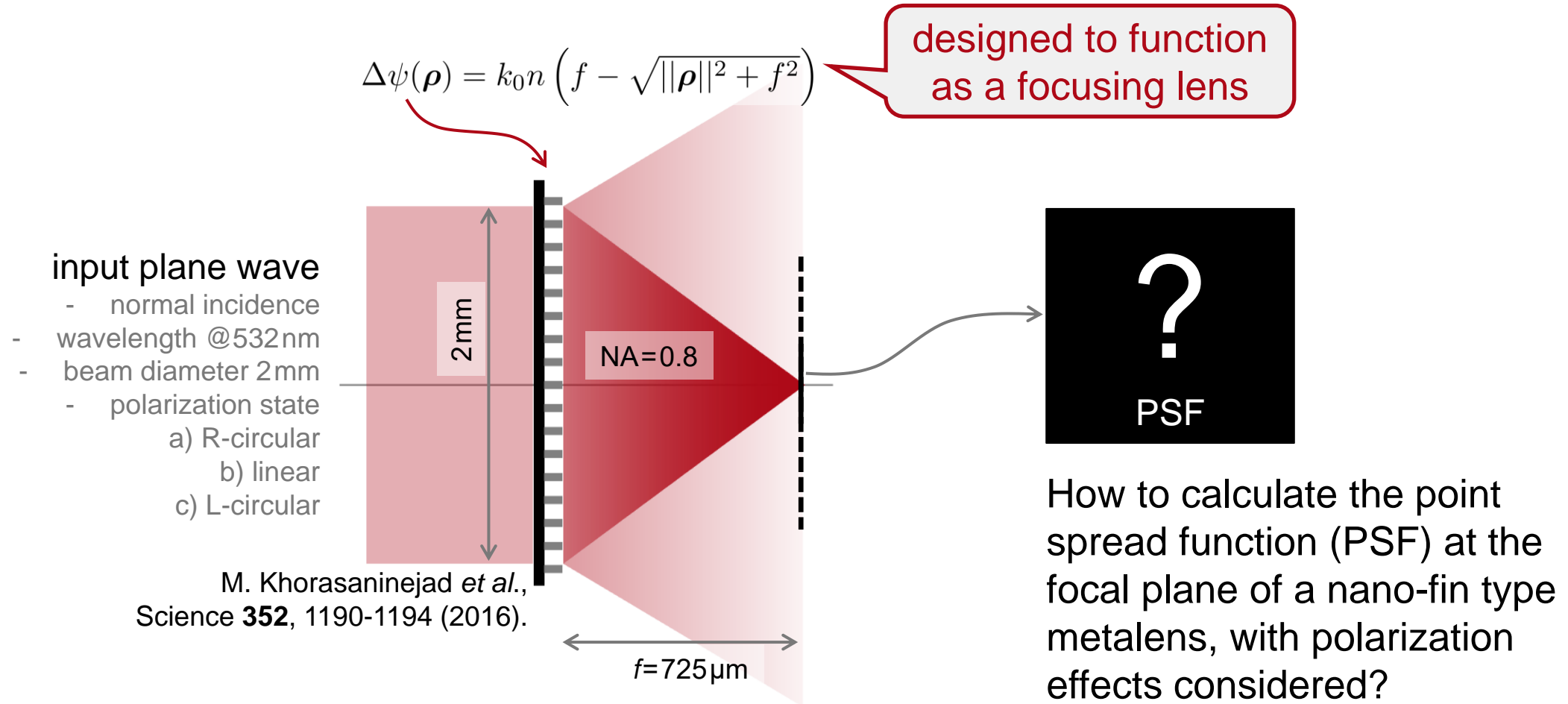
Modeling of a Metalens Singlet Based on Half-Wave Plate Model

Abstract

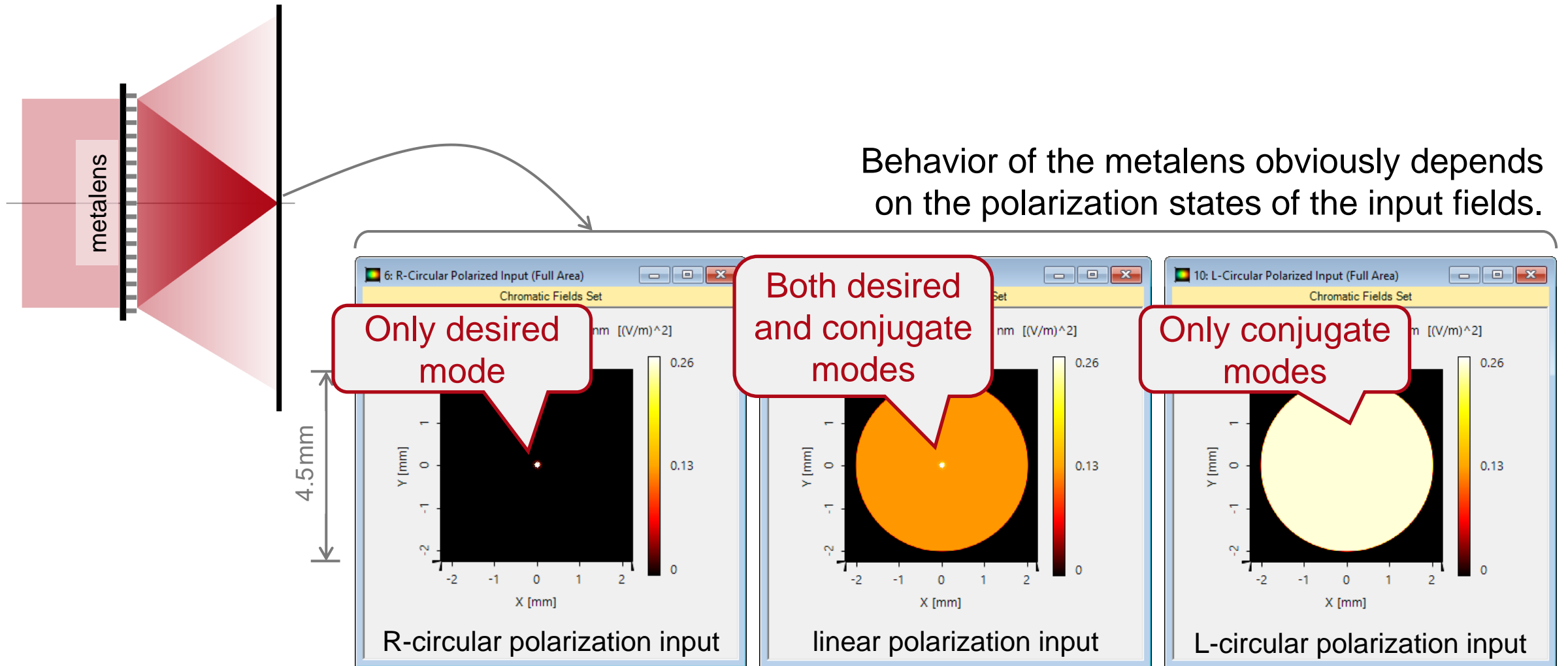


Well designed rectangular nanofin structures, with proper geometry and material, can be used to modulate the phase of the transmitted field. By rotating the orientation of each nanofin, the phase modulation changes accordingly. Based on this principle, one can assemble a complete metalens using nanofins with spatially varying orientations. Such a metalens is sensitive to the polarization of the input field and in this example, we demonstrate the polarization behavior.

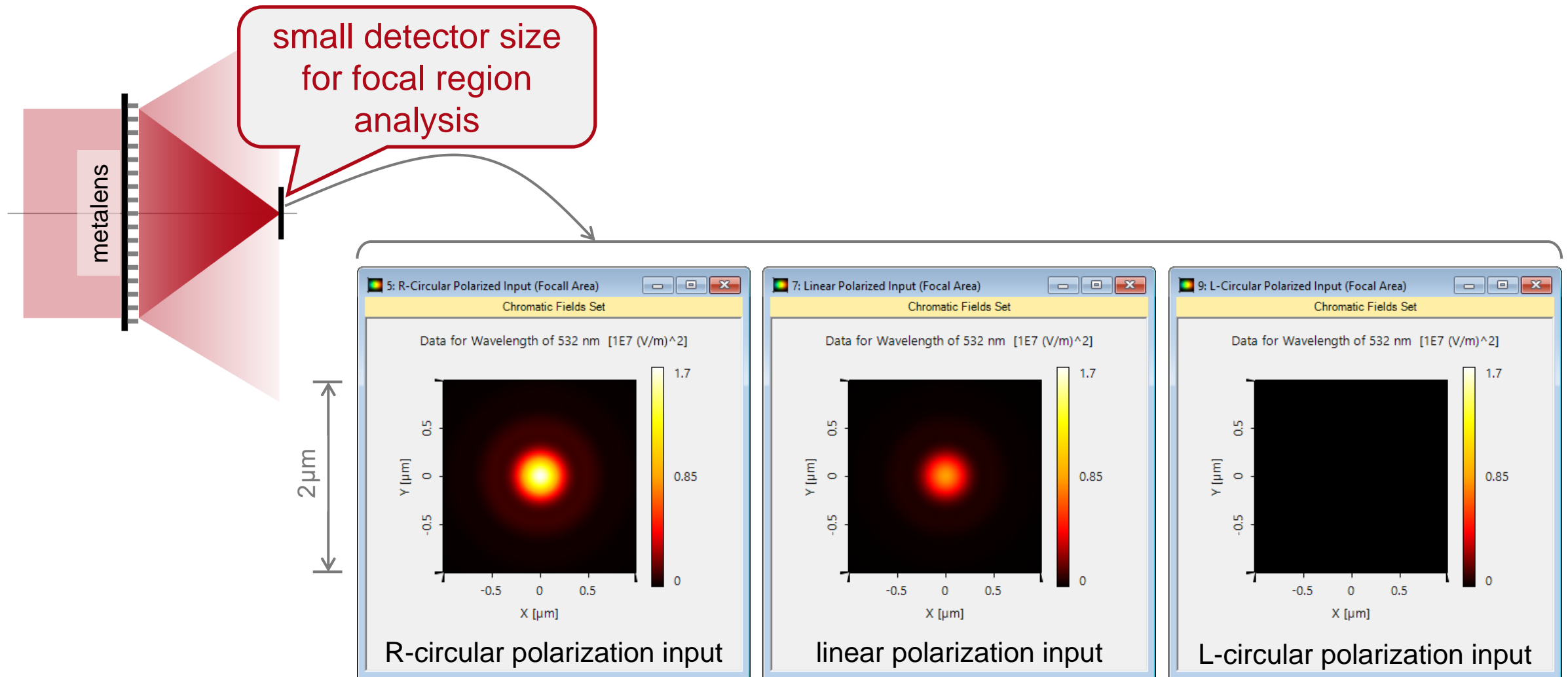
Modeling Task



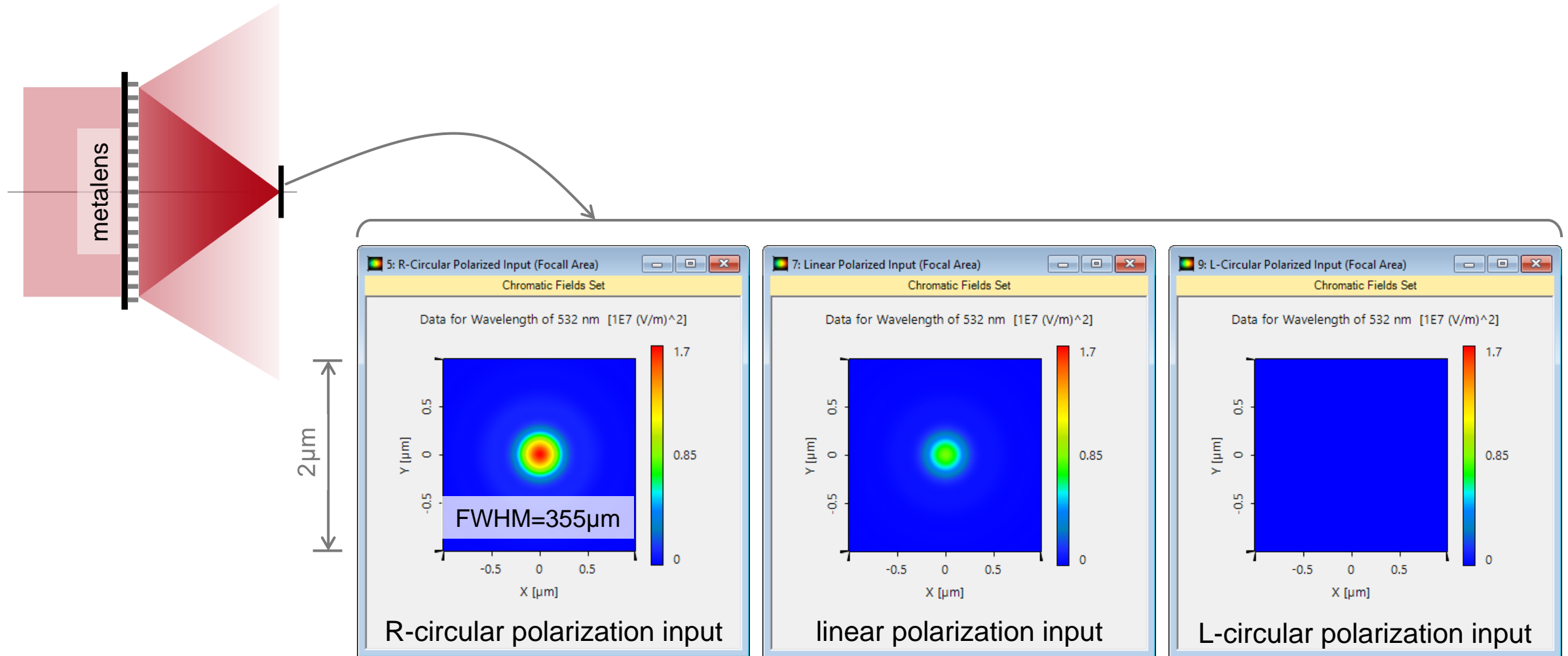
Simulation Results on Whole Detector Plane



Focal Area Analysis

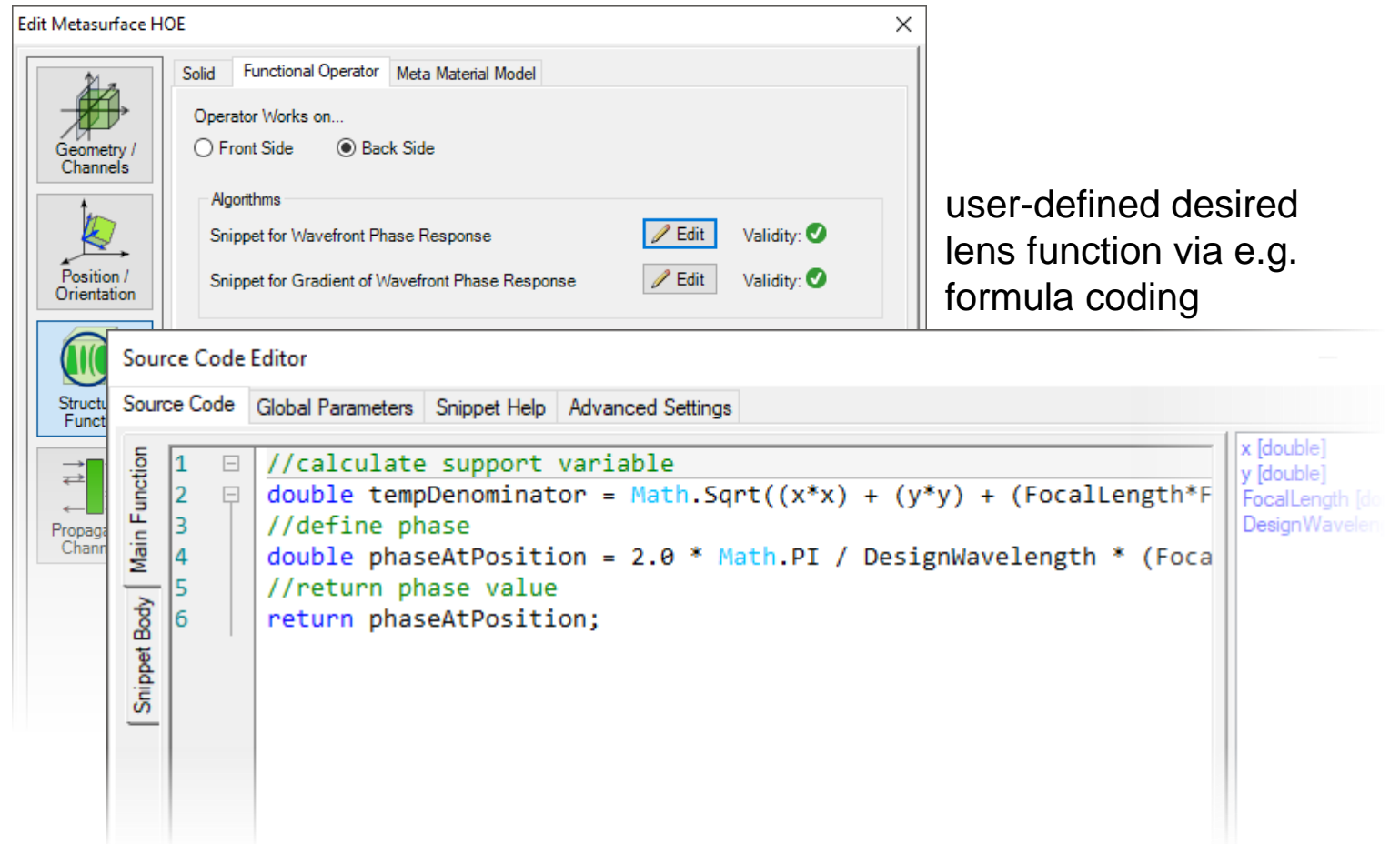
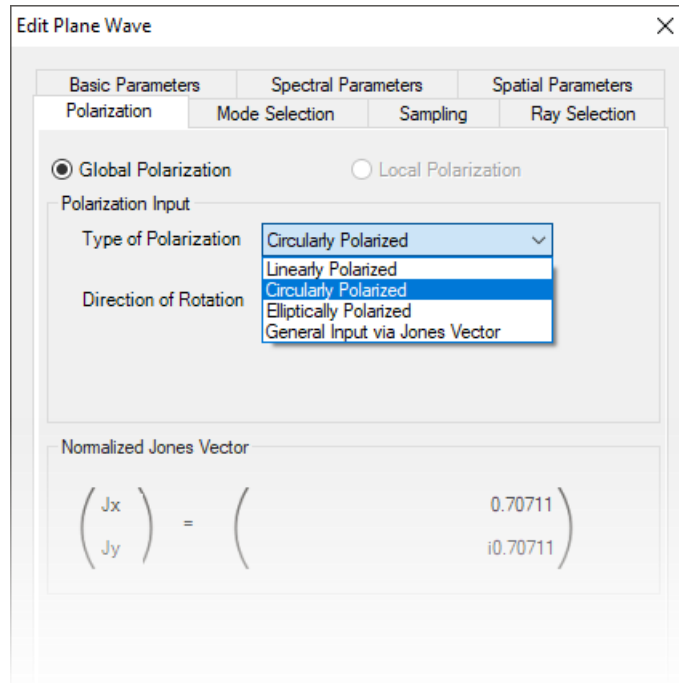


Focal Area Analysis



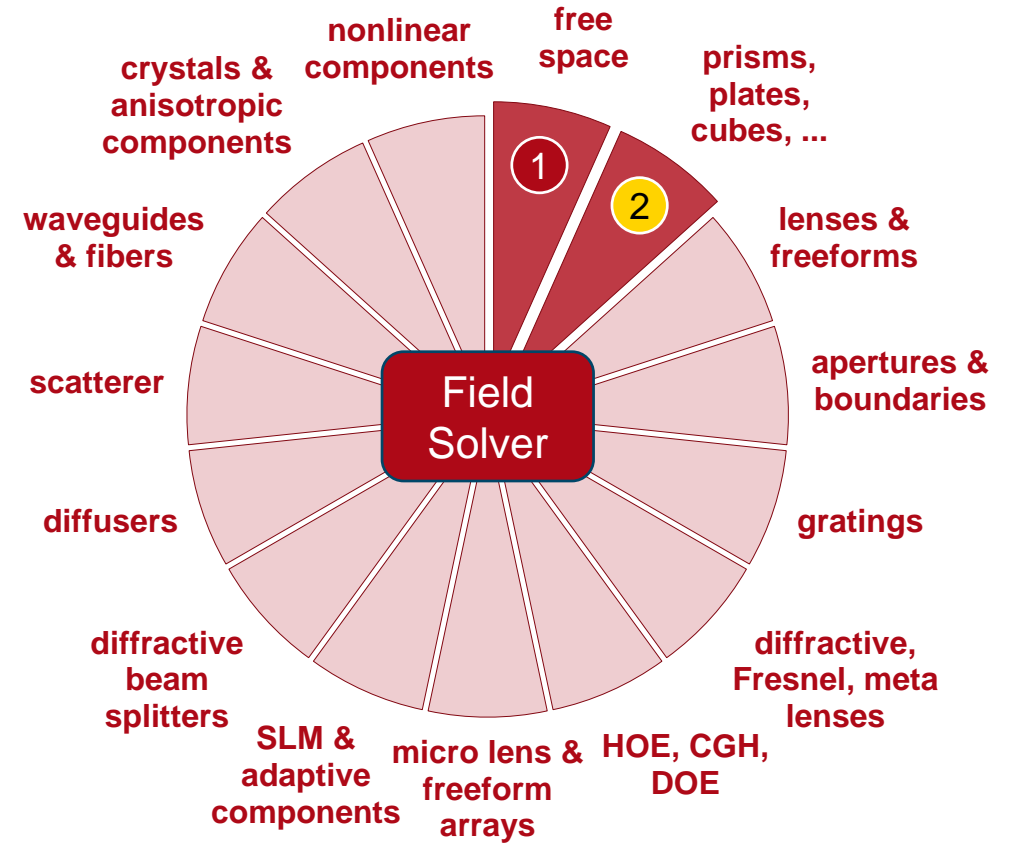
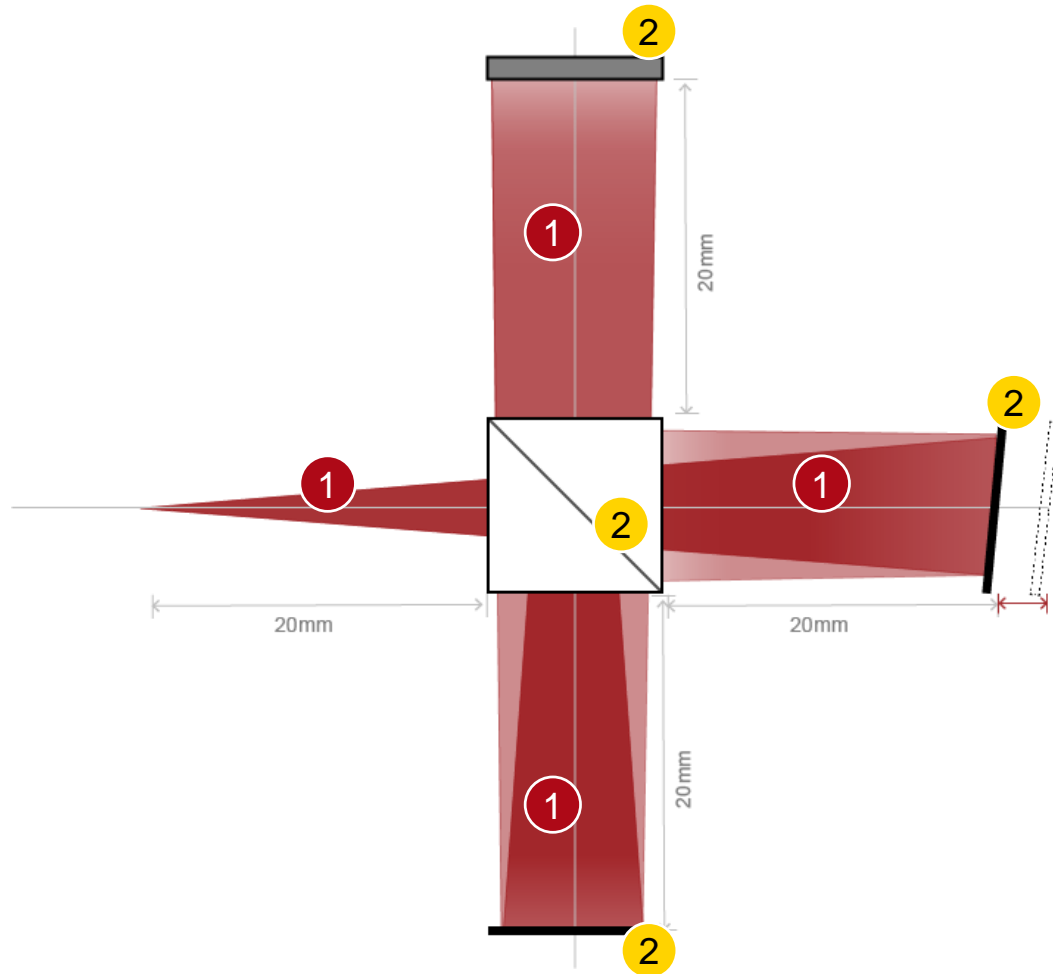
Peek into VirtualLab Fusion

polarization definition via pre-defined or customized Jones vectors



user-defined desired lens function via e.g. formula coding

VirtualLab Fusion Technologies



idealized component

Document Information

title	Modeling of a Metalens Singlet Based on Half-Wave Plate Model
document code	Demo.18
version	1.0
toolbox(es)	Starter Toolbox (Non-Sequential Extension)
VL version used for simulations	VirtualLab Fusion Summer Release 2019
category	Application Use Case
further reading	- ...