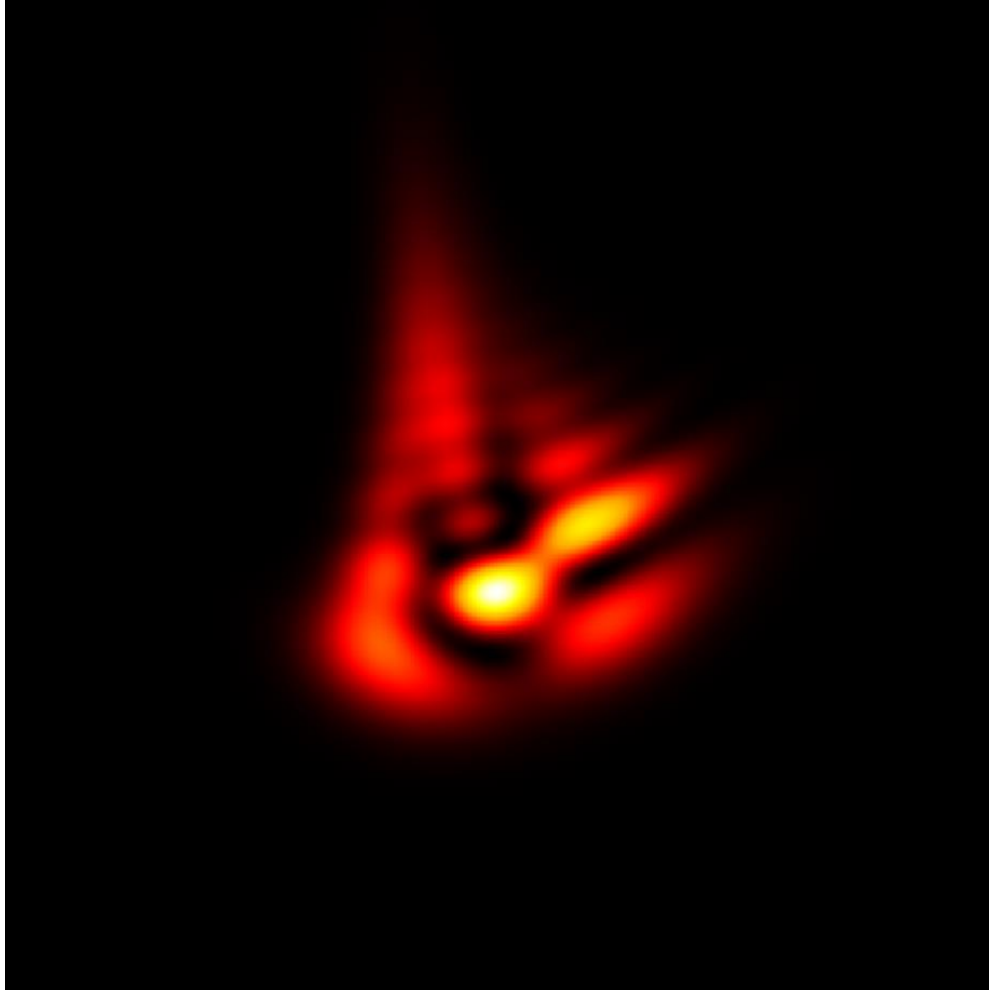


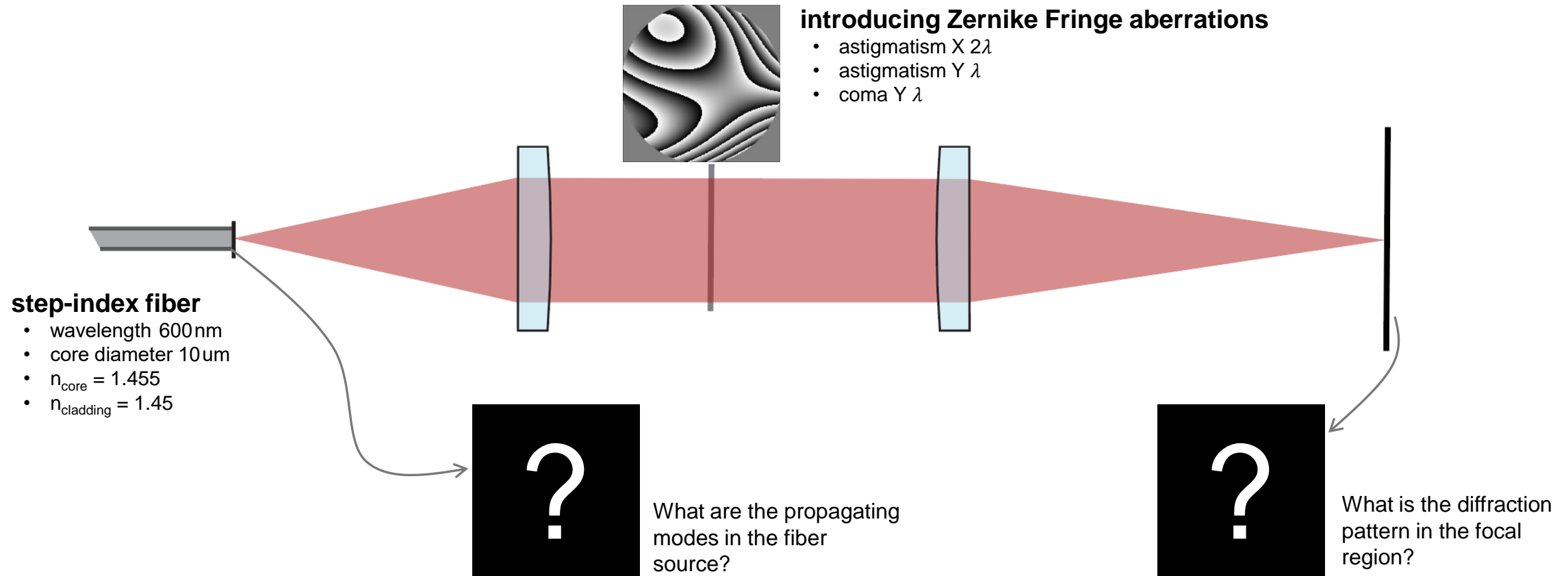
Aberration Effects on Focused Modes from a Fiber Source

Abstract



Fibers are widely used as sources in optical systems. Investigating the aberration effects of an optical system on the propagation of the fiber modes is therefore of interest. In this use case we employ the fast physical optics engine in VirtualLab Fusion to demonstrate how the shape of a set of modes generated by either a step- or graded-index fiber, and the total field resulting from their combination, is affected by propagation through an aberrated optical system.

Modeling Task with a Step-Index Fiber

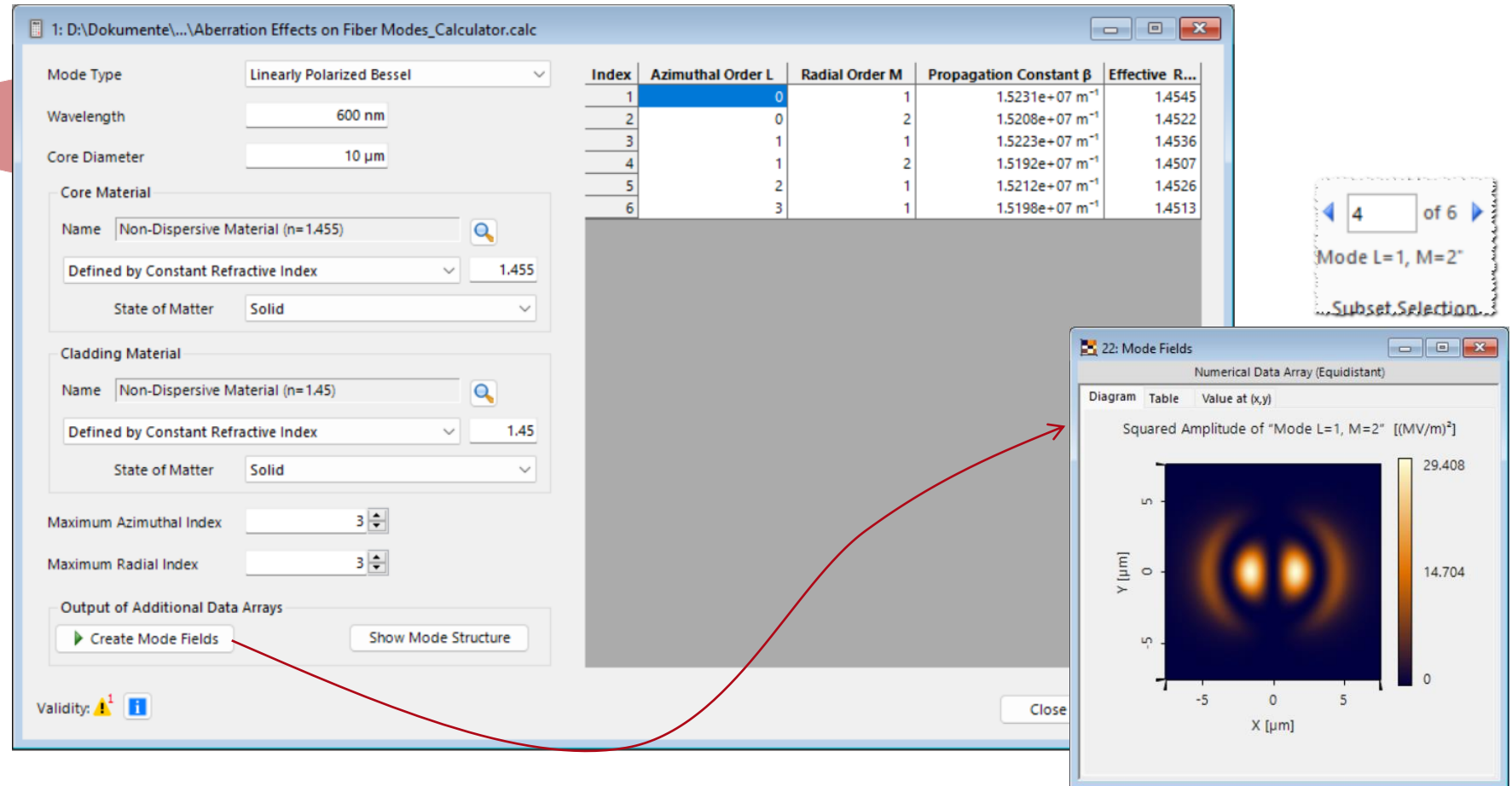


Linearly Polarized Mode Calculator

step-index fiber

- wavelength 600nm
- core diameter 10μm
- $n_{\text{core}} = 1.455$
- $n_{\text{cladding}} = 1.45$

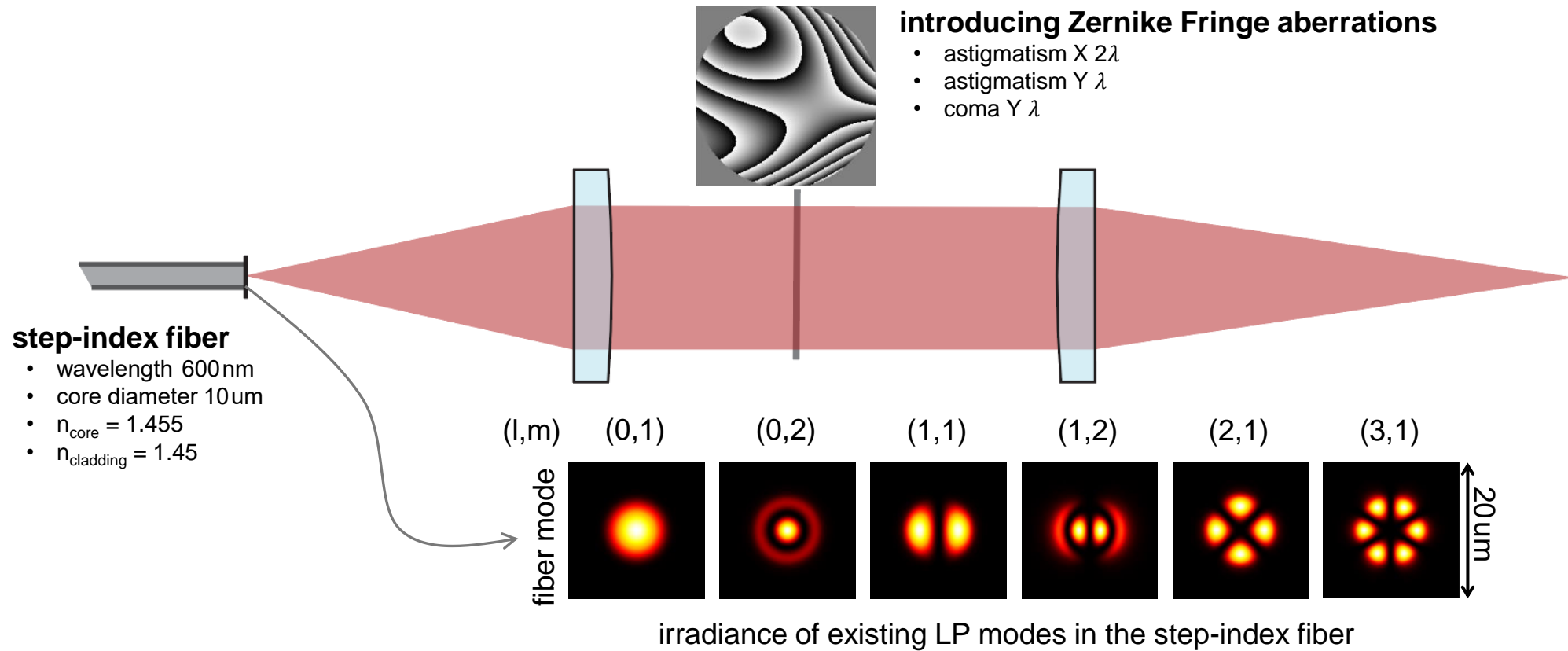
This calculator gives the propagation constants and mode fields of all existing linearly polarized (LP) modes.



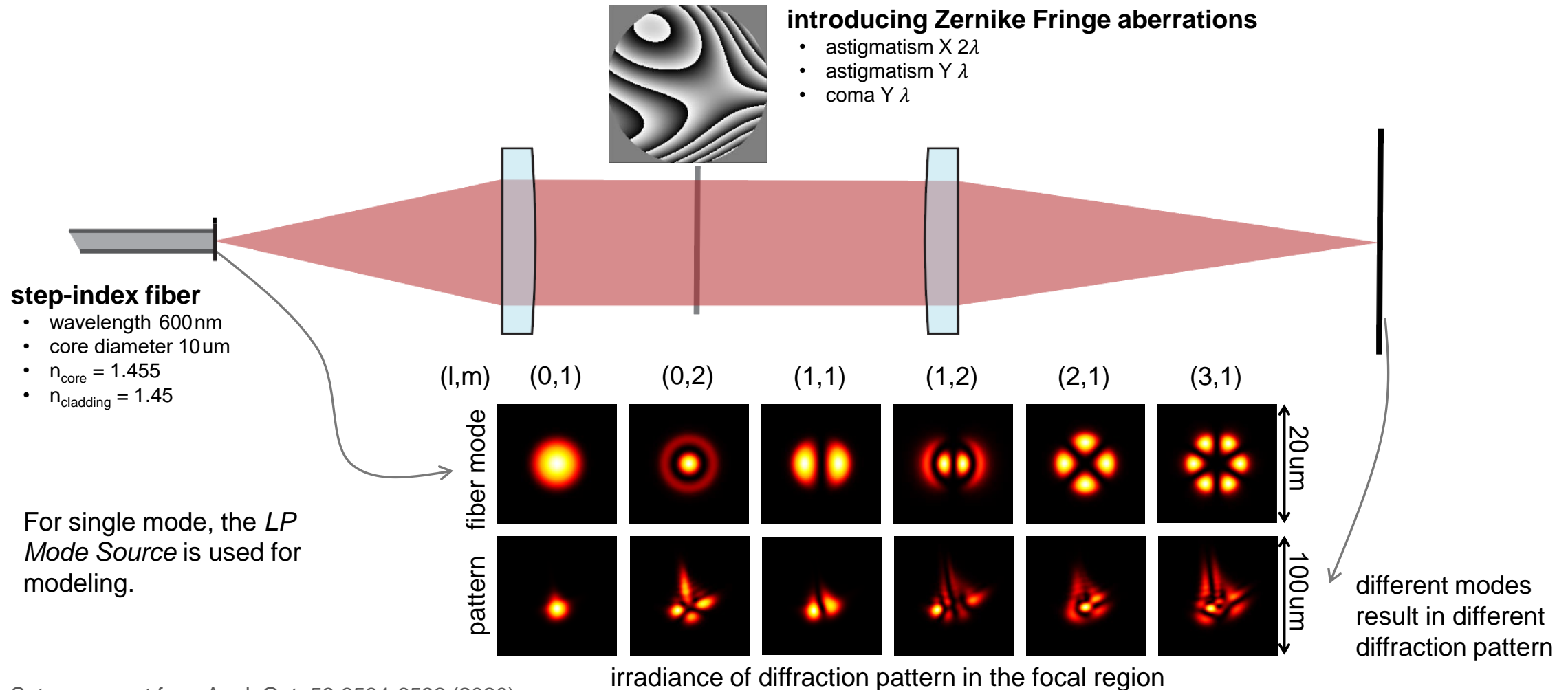
For further information:
[LP Fiber Mode Calculator](#)

fields of all LP modes

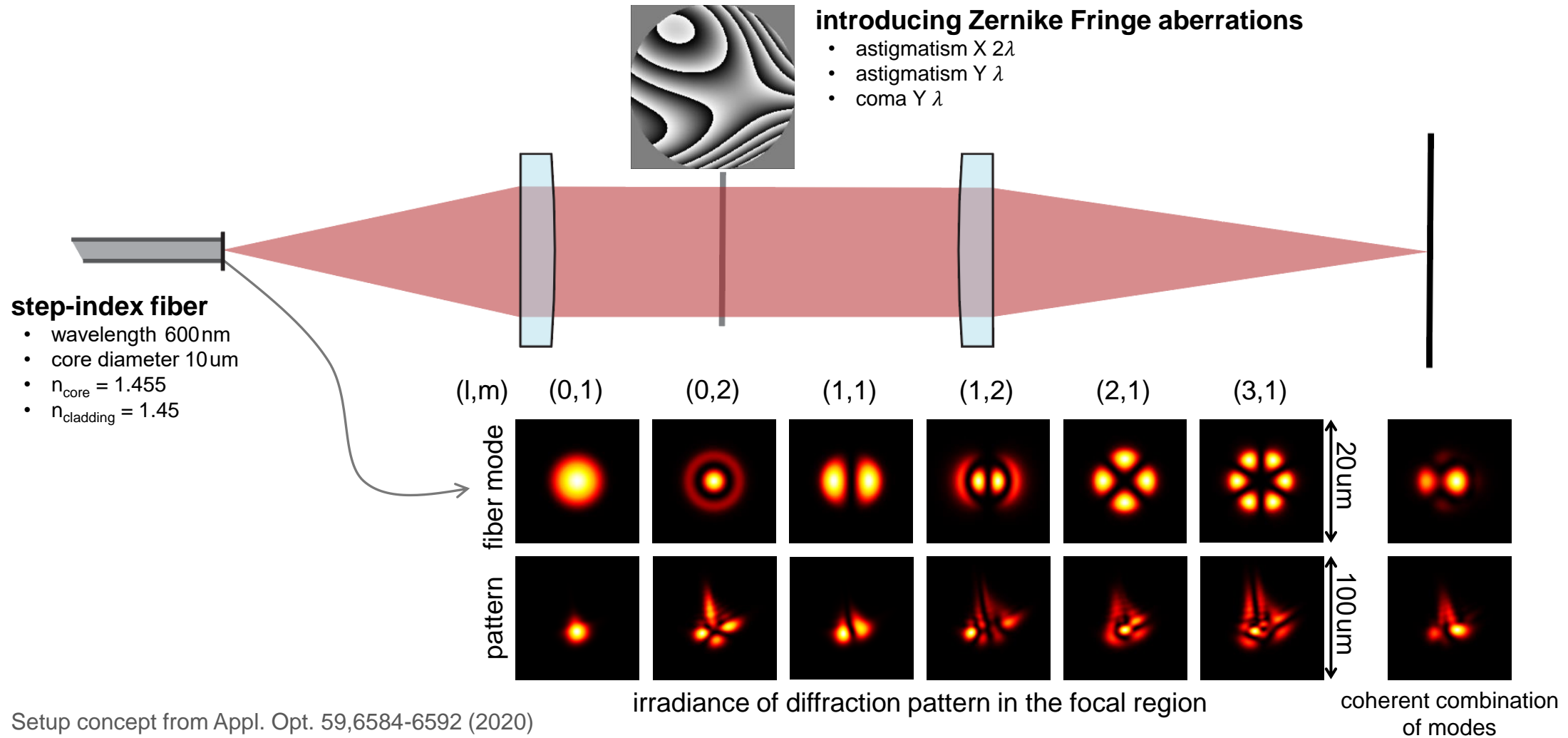
Source of Fiber Modes



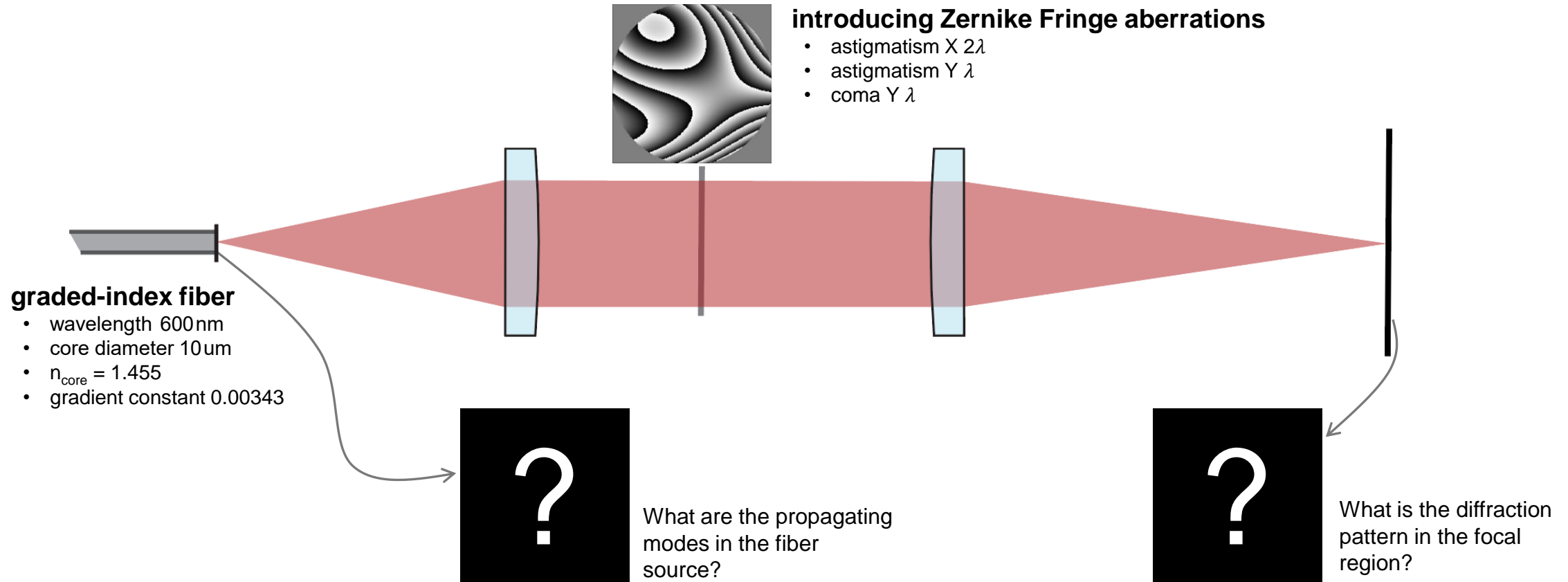
Diffraction Patterns



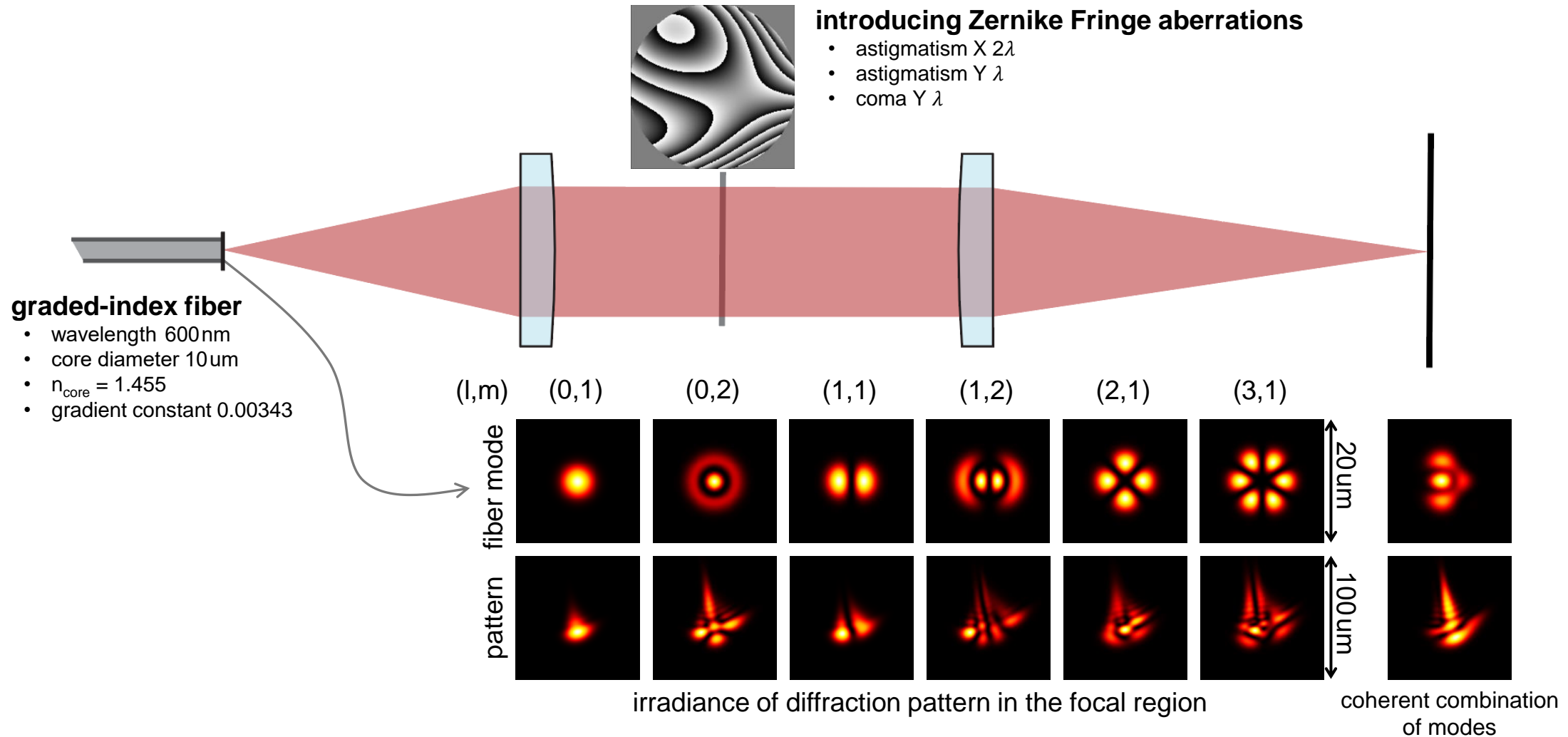
Switch from Single Mode Source to Multiple Light Source



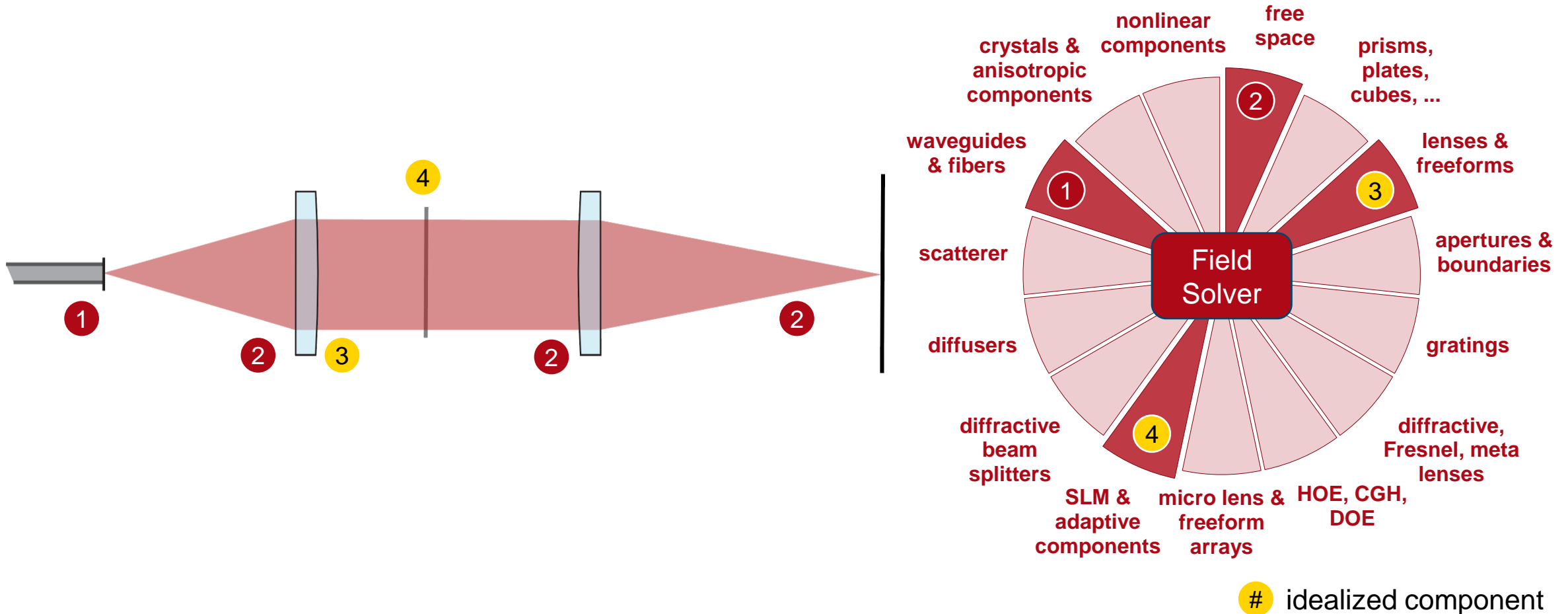
Modeling Task with a Graded-Index Fiber



Source Modes and Diffraction Patterns



VirtualLab Fusion Technologies



Document Information

title	Aberration Effects on Focused Modes from a Fiber Source
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