

Generation of Vector Beam by a Sagnac-Like Interferometer

Abstract



Vector beam is a fully polarized beam, but has spatially different polarization distribution. It can be used in many applications, e.g., microscopy illumination. Following the idea of T. Wang et al., Appl. Phys. B 122:231 (2016), this use case demonstrates a Sagnac-interferometer scheme to generate a vector beam. This setup contains an SLM of spiral phase, a polarization beam splitter, and a quarter-wave plate.

Modeling Task



Ray Tracing and Field Tracing Results



Results of Energy Density





T. Wang et al, Appl. Phys. B 122:231 (2016)

Peek into VirtualLab Fusion



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Workflow in VirtualLab Fusion

- Setup the Sagnac-Interferometer by manual channel configuration
 - <u>Laser-Based Michelson Interferometer and Interference</u>
 <u>Fringe Exploration</u> [Use Case]
 - <u>Channel Setting for Non-Sequential Tracing</u> [Use Case]
- Set the Fourier transforms properly
 - Fourier Transform Settings Discussion at Examples [Use Case]

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Fast Fourier Transform			Fast Fourier Transform
Semi-Analytical Fourier Transform			Semi-Analytical Fourier Transform
Pointwise Fourier Transform			Pointwise Fourier Transform
Use Spherical Phase Only			Use Spherical Phase Only
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VirtualLab Fusion Technologies



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