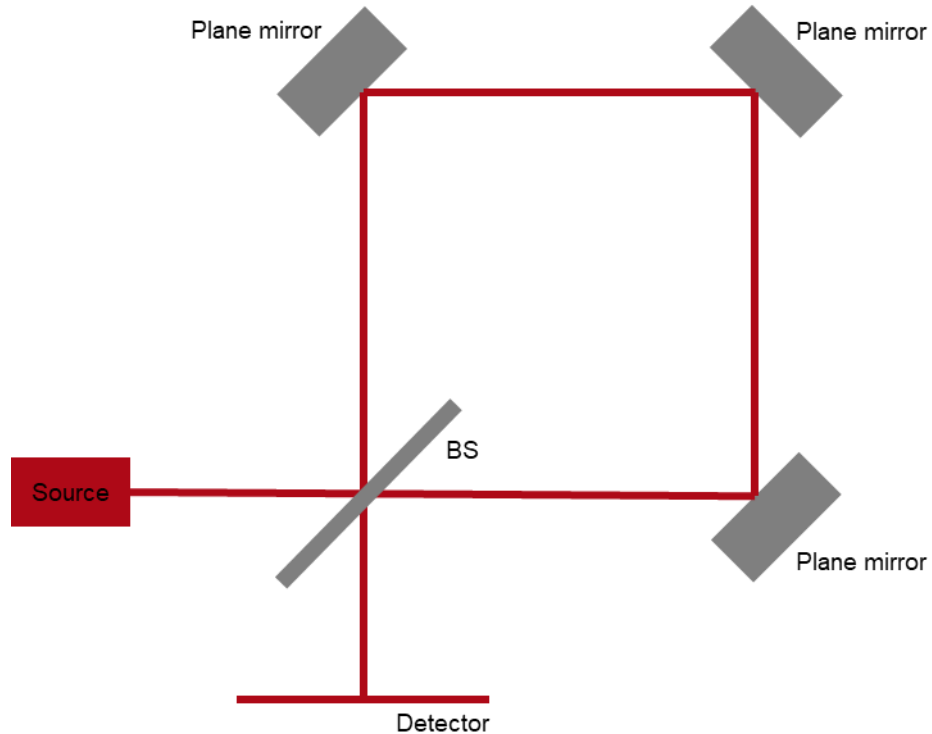


Sagnac Interferometer

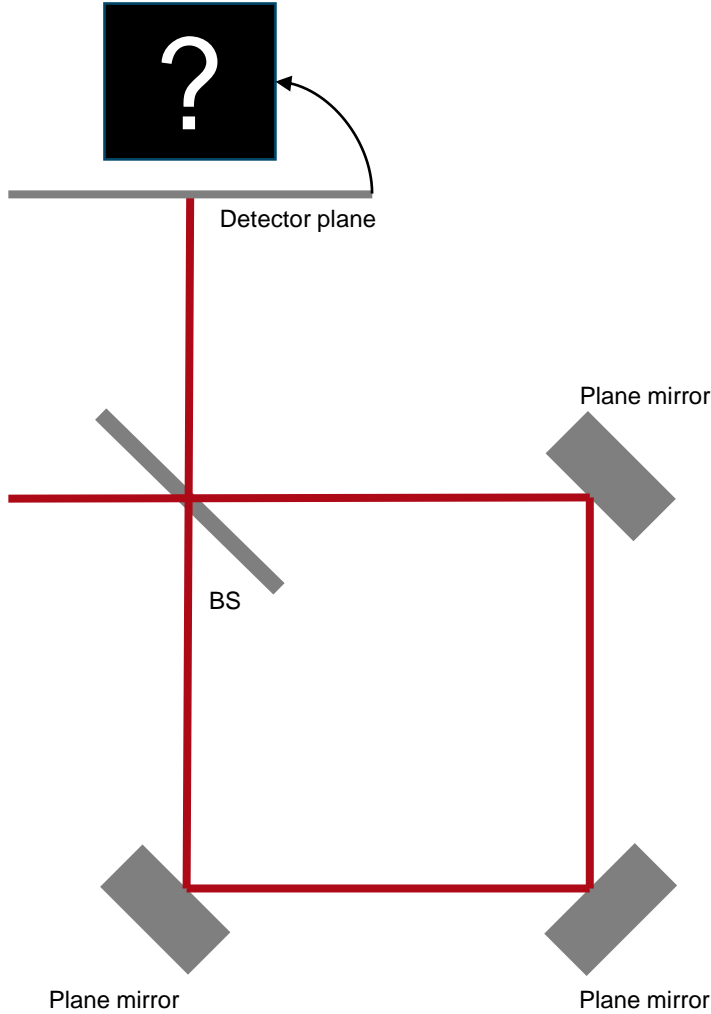
Abstract



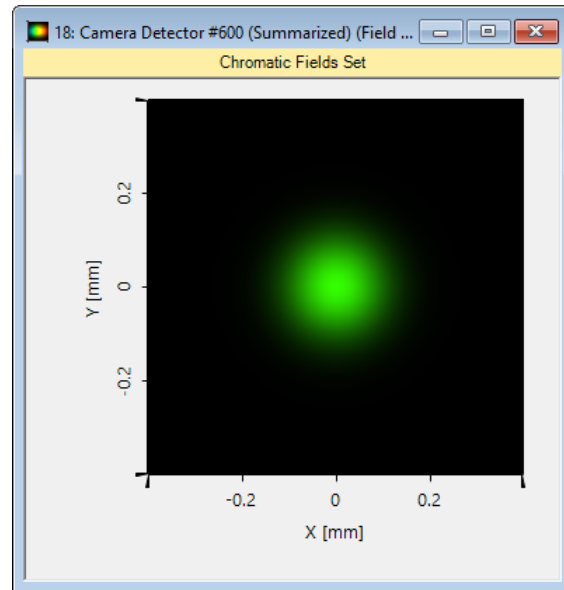
In this Demo we seek to simulate the interference pattern in a Sagnac interferometer setup. Sagnac is a common-path interferometer which is quite useful due to its sensitivity to rotation. Non-Sequential Field Tracing enables one to conduct a thorough analysis of such interferometric systems.

Task: Simulation of Interference (Without Tilt)

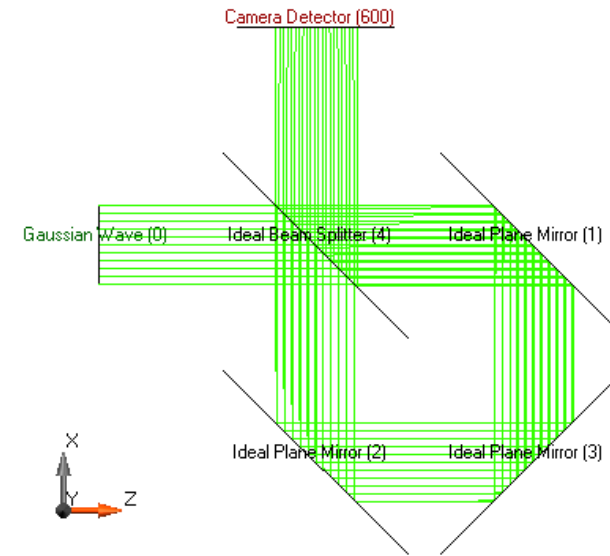

Gaussian wave
Wavelength: 532 nm
Waist radius: 100 μm x 100 μm
Linearly polarized



Results:

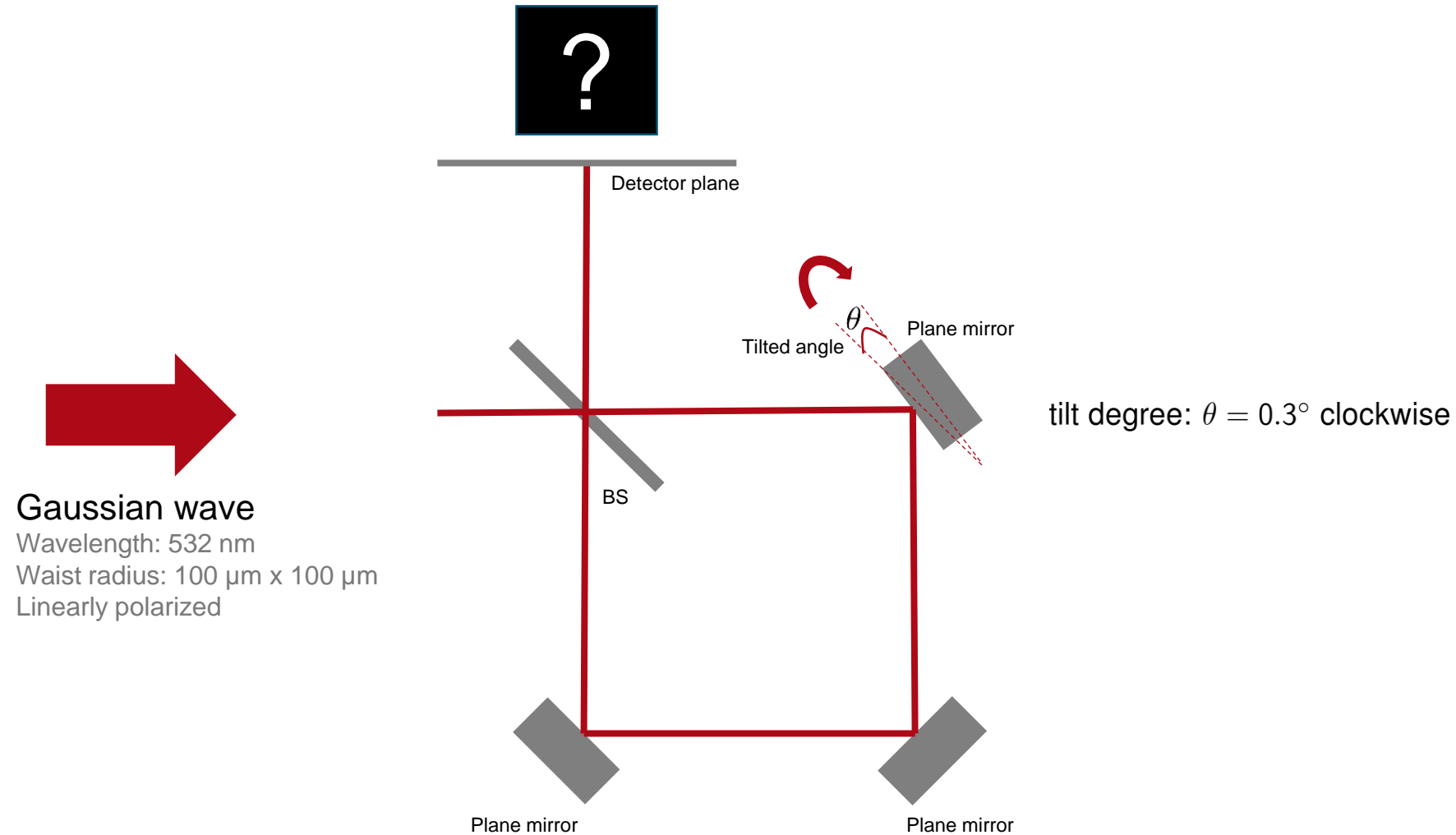


Result on camera detector

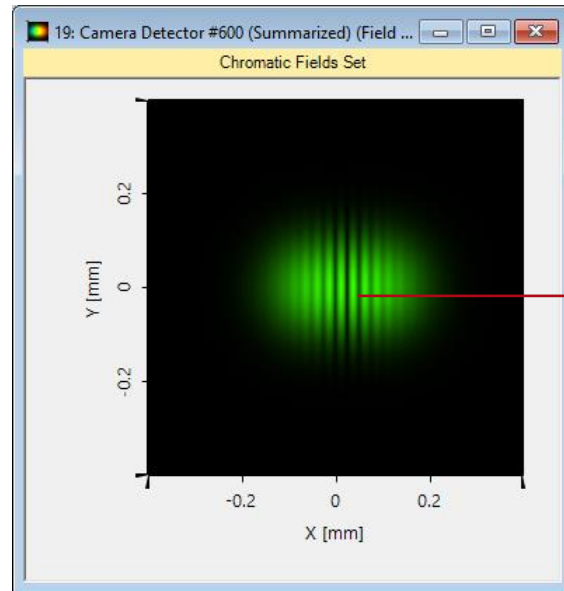


Top view of the optical setup in VirtualLab Fusion done by Ray Tracing System Analyzer

Task: Simulation of Interference (Tilted Mirror)

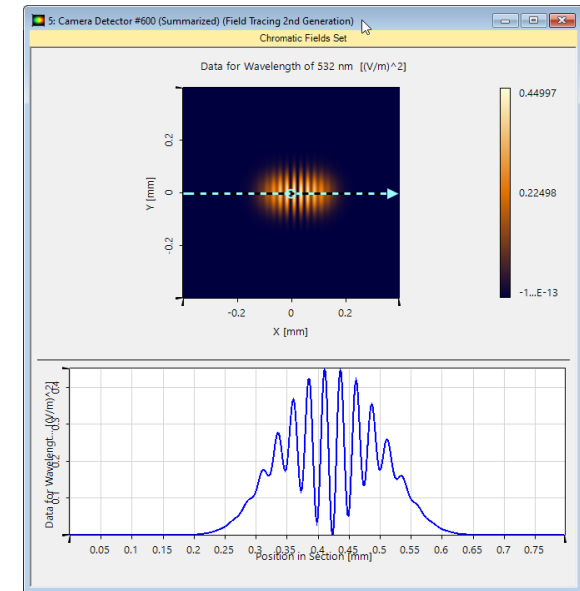


Results:



Result on camera detector

Interference pattern can be seen due to the tilted mirror.



Cross section view

Document Information

title	Sagnac Interferometer
document code	Demo.22
version	1.0
VL version used for simulations	VirtualLab Fusion Spring Release 2020
category	Demo
further reading	- <u>System Analysis with Sequential and Non-Sequential Field Tracing</u>
