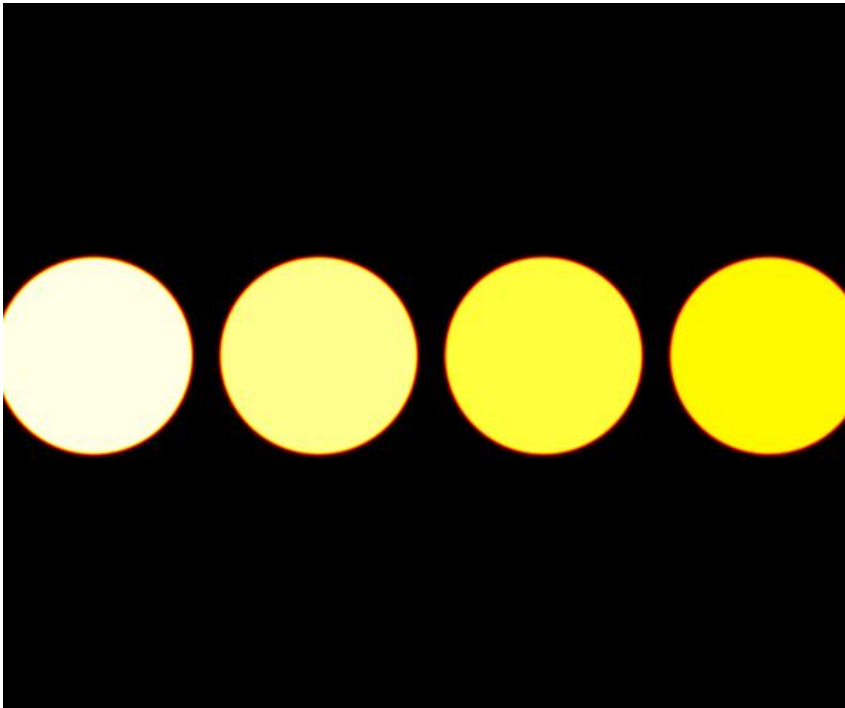


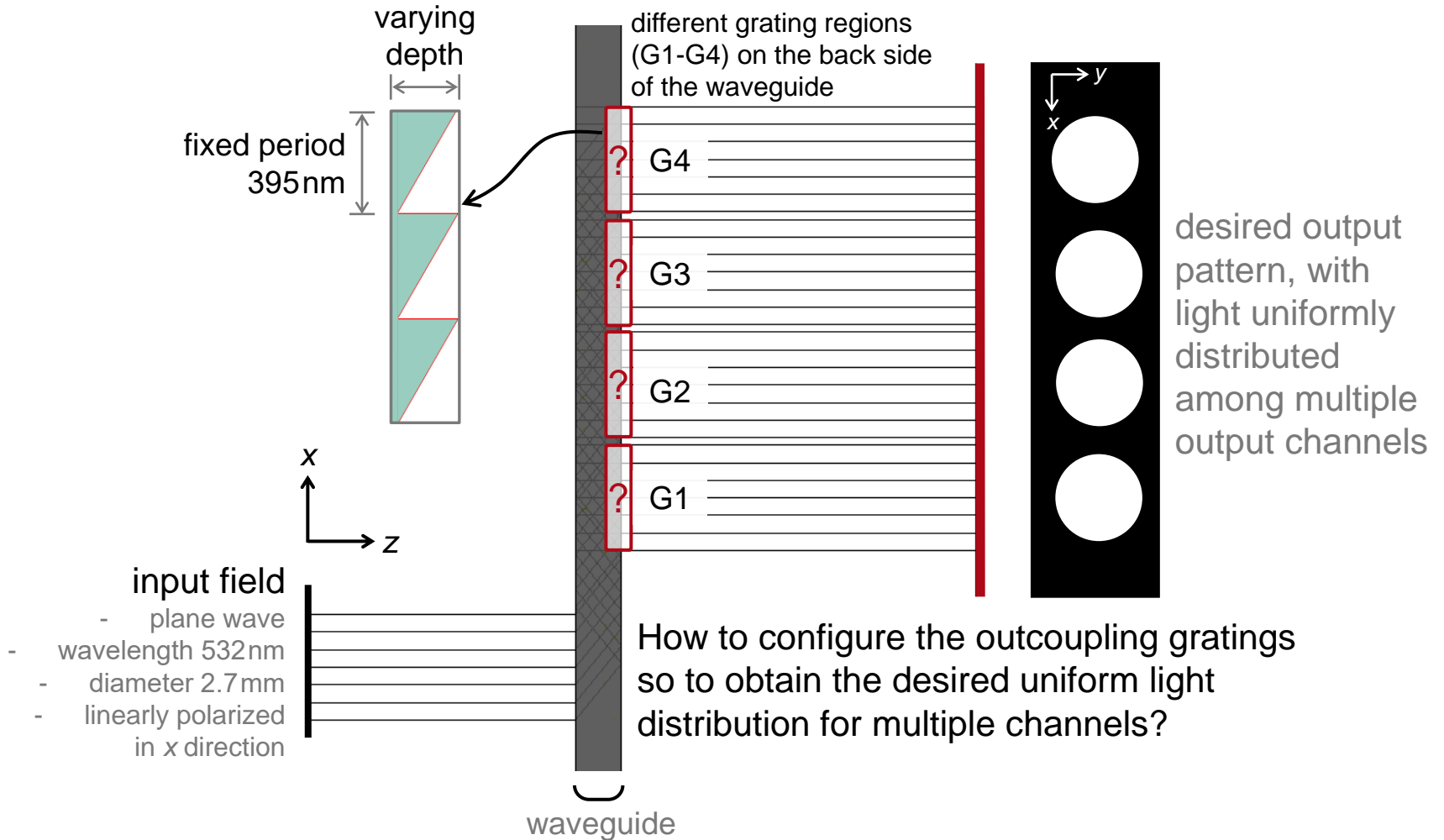
Optimizing Waveguide Outcoupling Gratings for Uniform Multiple Channels

Abstract



In the design of waveguide-based near-to-eye displays, a key issue is the configuration of the in- and outcoupling gratings. As a multi-channel imaging system, the uniformity among all output channels must be ensured. In this example, a set of outcoupling gratings are optimized in VirtualLab, so to generate uniform multiple channels. For grating modeling and diffraction efficiency calculation in the optimization, rigorous Fourier modal method is employed.

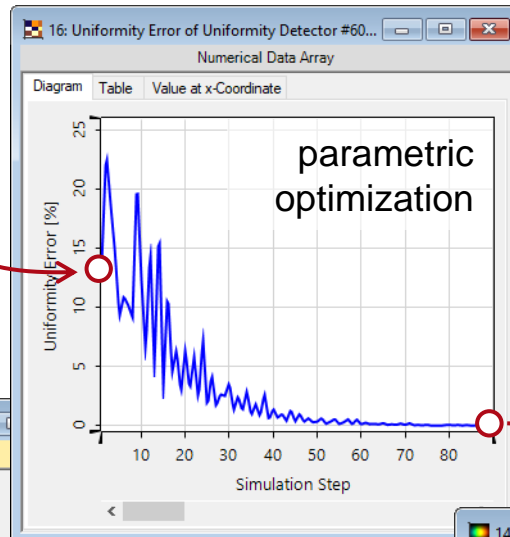
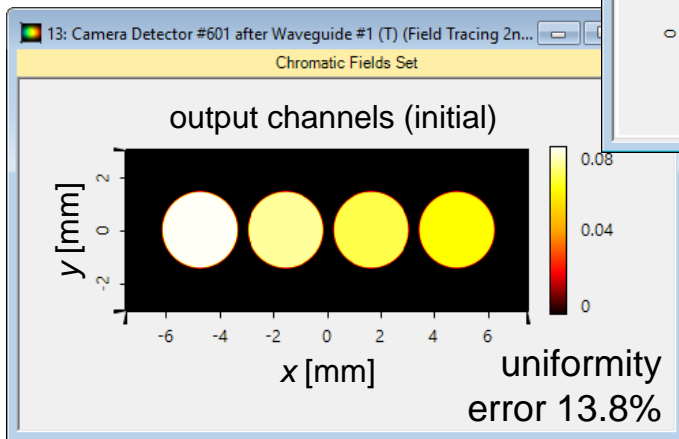
Design Task



Results

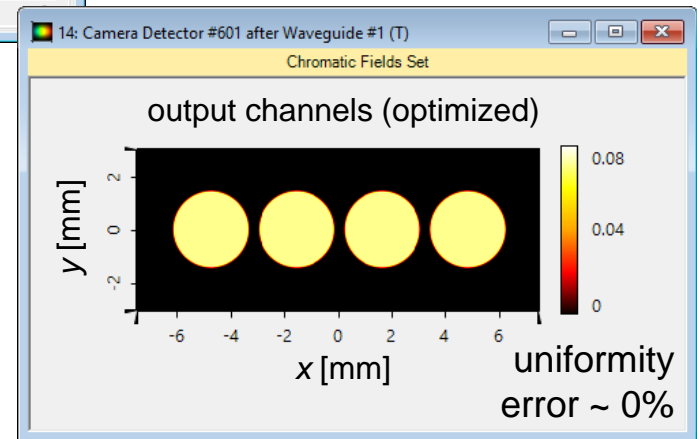
initial grating configuration

Grating	Depth
G1	140nm
G2	140nm
G3	140 nm
G4	140 nm



optimized grating configuration

Grating	Depth
G1	132nm
G2	138nm
G3	145 nm
G4	153 nm



Rigorous Fourier modal method (FMM) is used for calculation of grating efficiencies in the modeling.

Document Information

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category	Application Use Case
