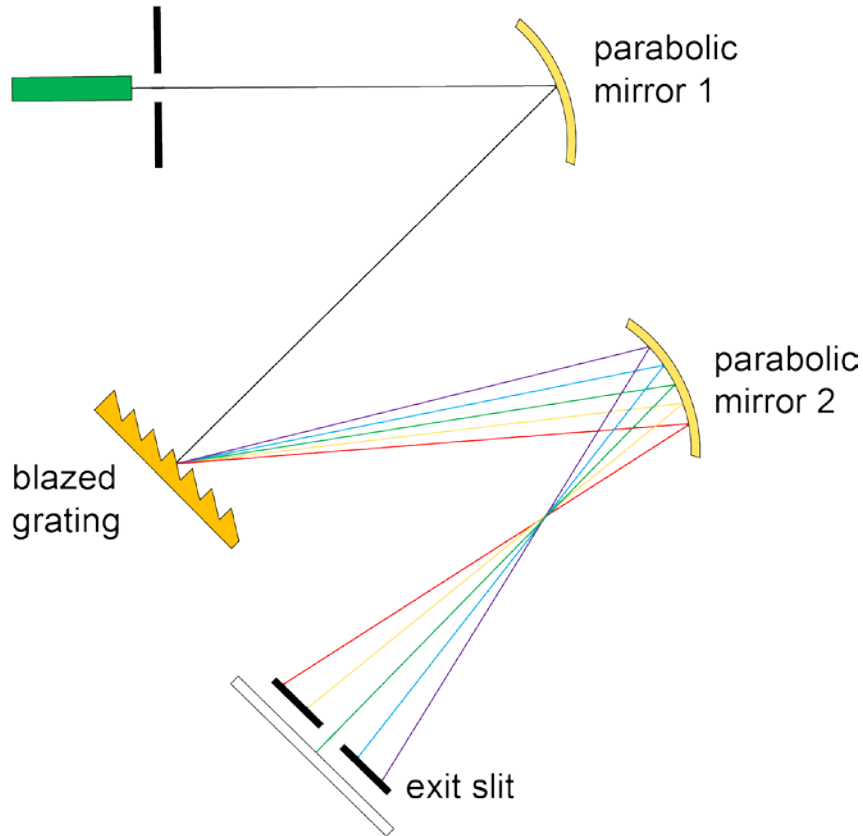


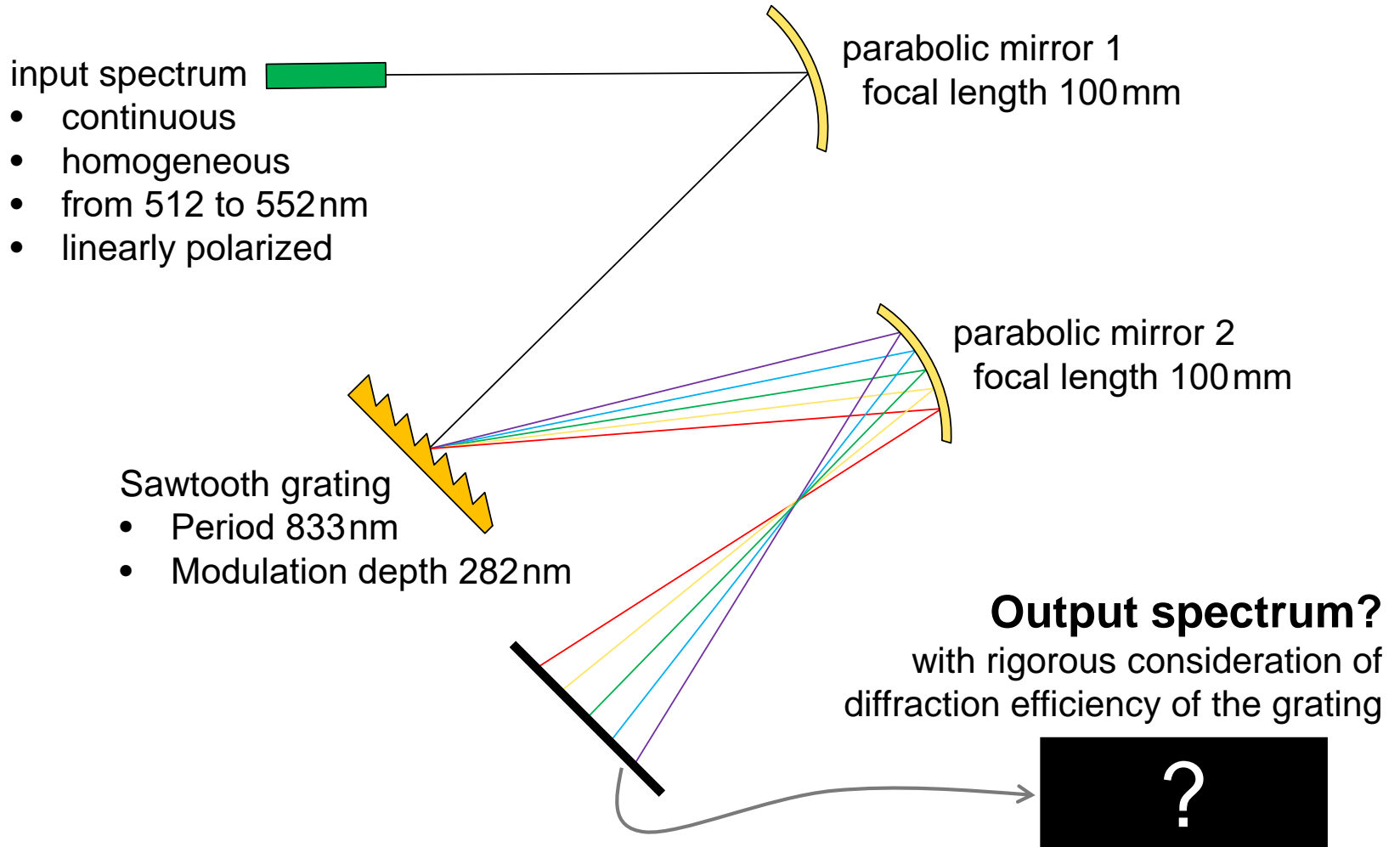
# Czerny-Turner Monochromator

# Abstract



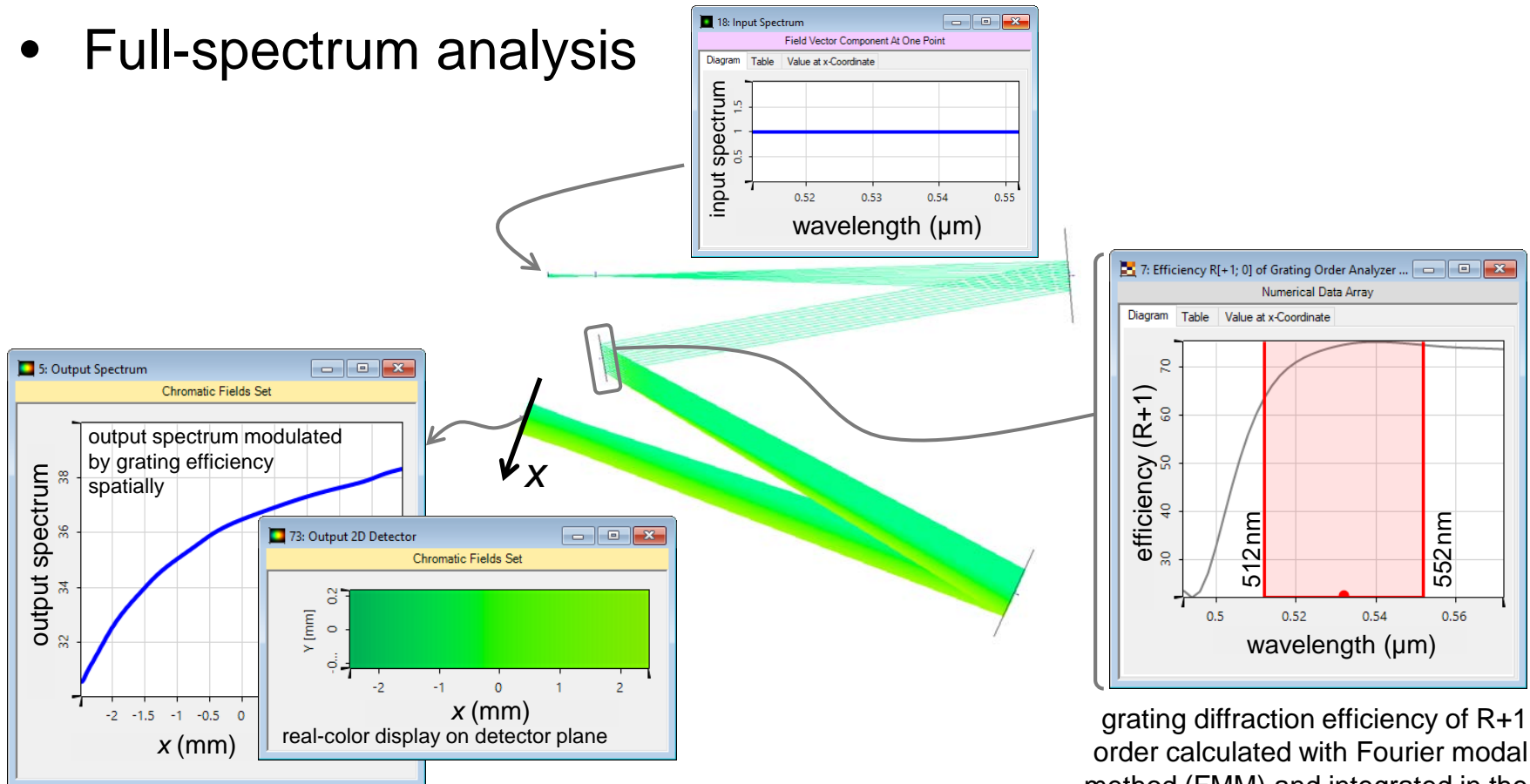
Czerny–Turner monochromator is widely used to analysis the spectral information of light sources. Typically, a parabolic mirror is used to collimated the source first, and then a diffraction grating will spatially separate the colors spatially. Only selected color is directed to the exit slit. A simulation of the complete monochromator, including real reflective mirrors and diffractive gratings is presented, especially with the grating modeled with Fourier modal method (FMM).

# Modeling Task



# Results

- Full-spectrum analysis

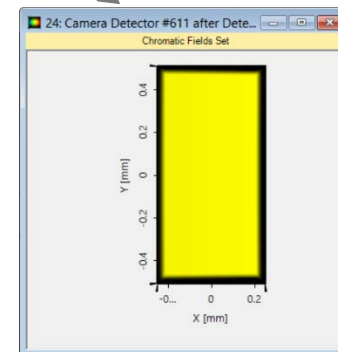
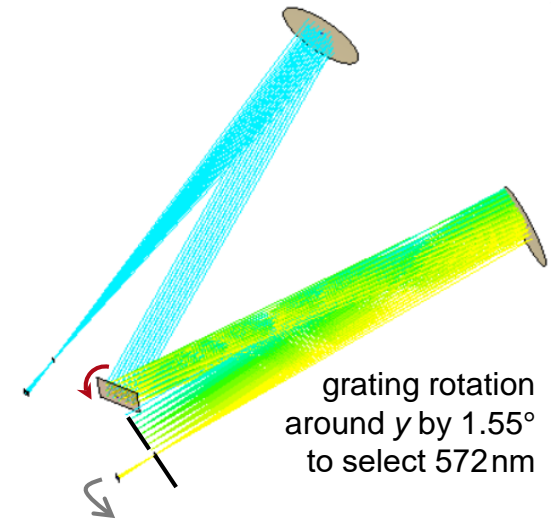
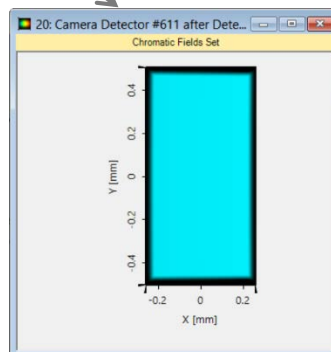
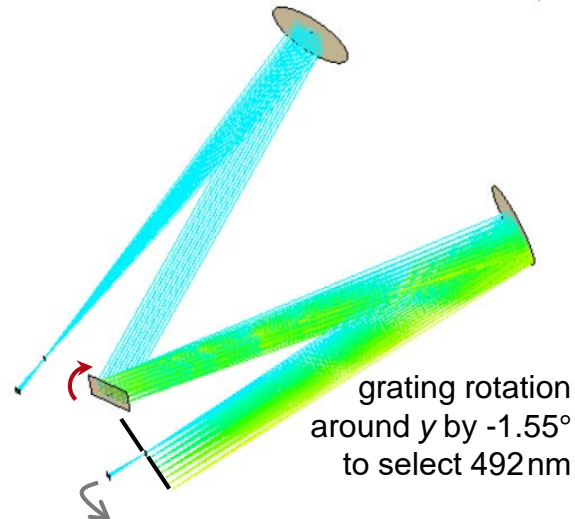
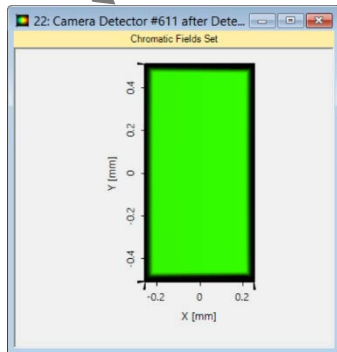
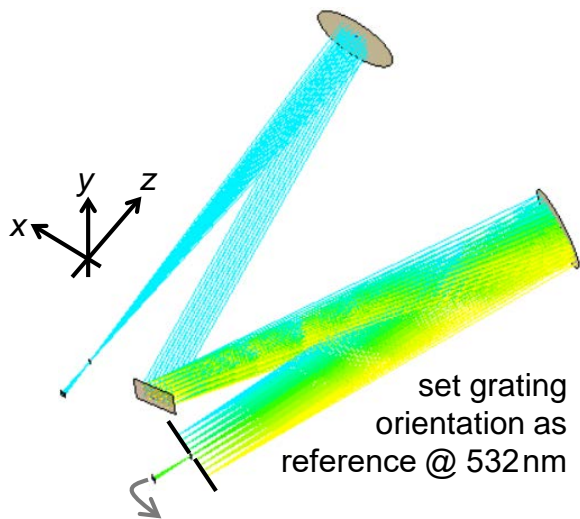


simulation with 400 wavelengths takes  $\sim 470\text{s}$   
single-wavelength simulation takes  $\sim 1\text{s}$

grating diffraction efficiency of R+1 order calculated with Fourier modal method (FMM) and integrated in the system simulation

# Results

- Wavelength selection by exit slit



# Document Information

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title	Czerny-Turner Monochromator
version	1.0
VL version used for simulations	7.0.3.4
category	Application Use Case

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