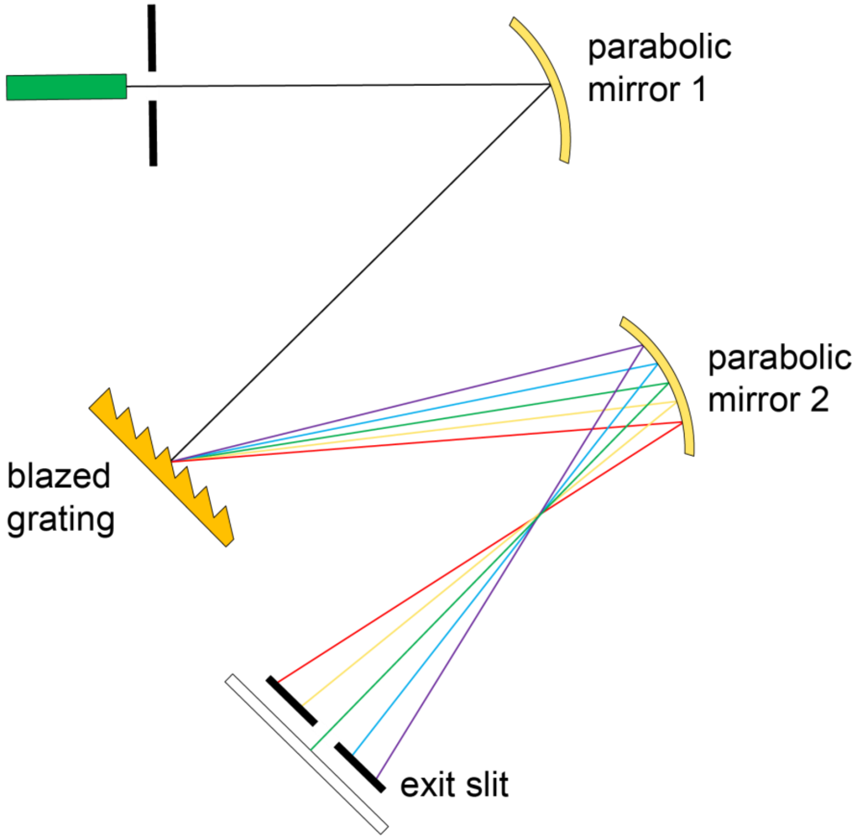
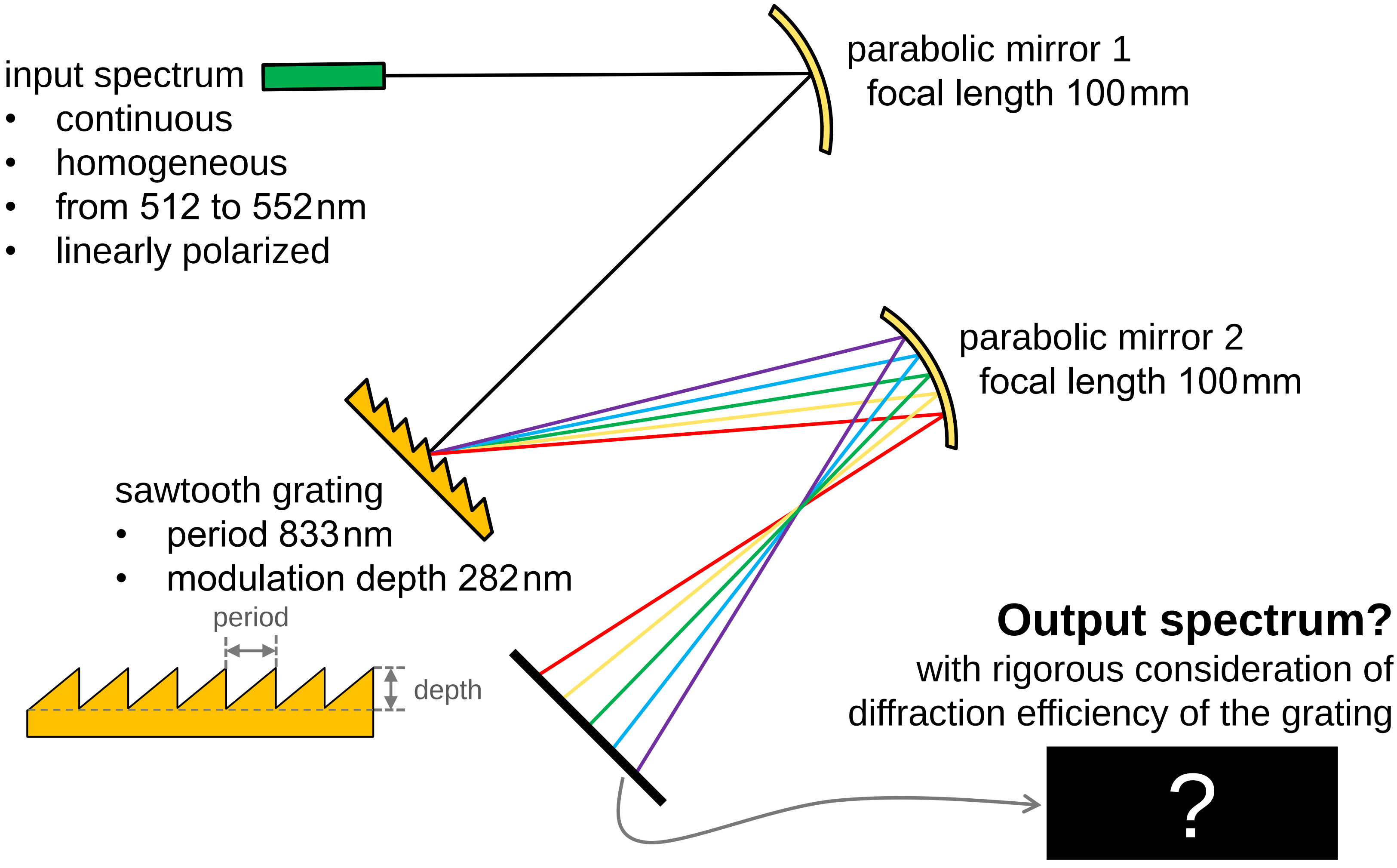
Czerny-Turner Setup

Abstract



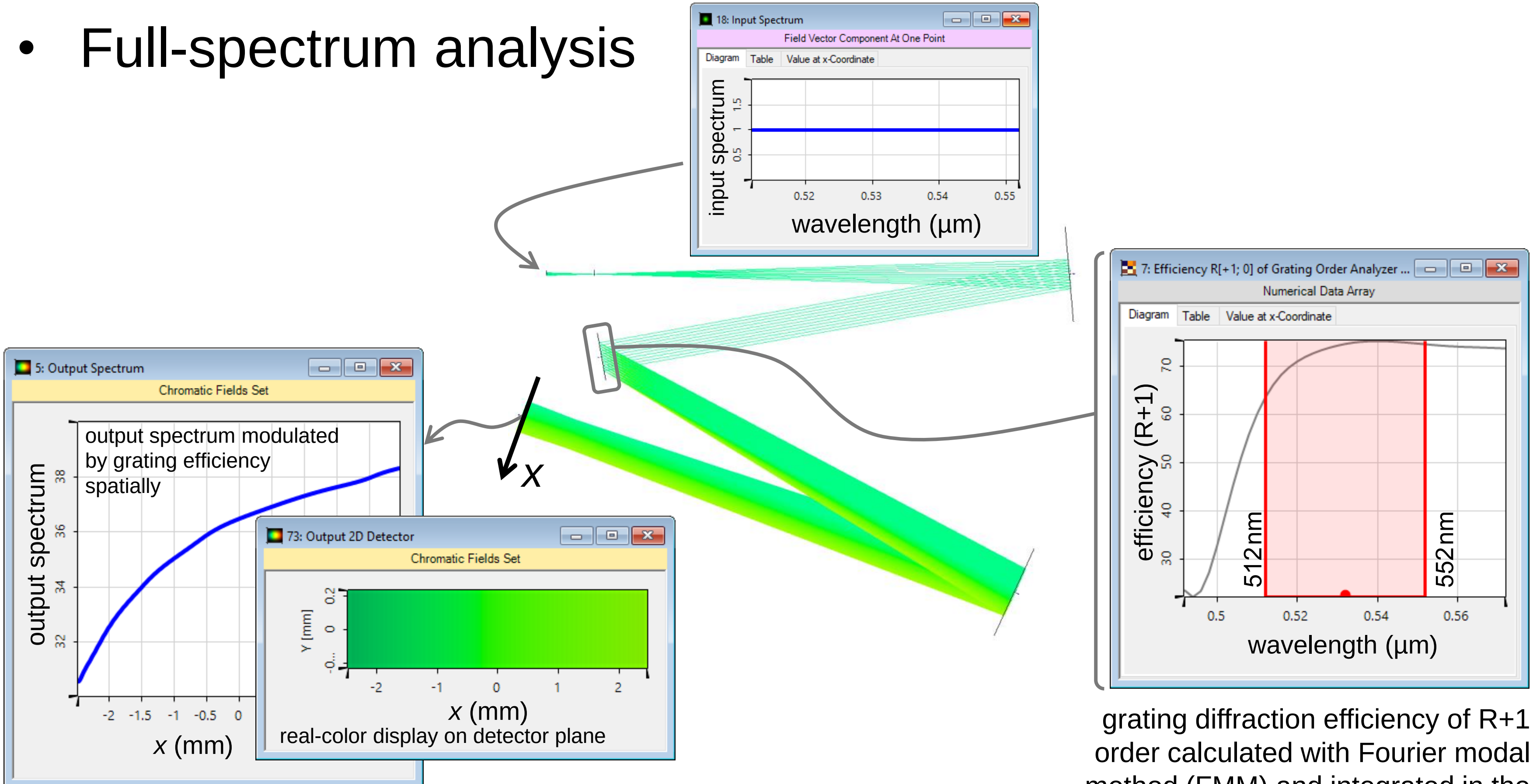
Czerny-Turner setup is widely used to analysis the spectral information of light sources. Typically, a parabolic mirror is used to collimated the source first, and then a diffraction grating will spatially separate the colors spatially. By setting an exit slit properly, a specific color can be selected. A simulation of the complete Czerny-Turner setup, 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

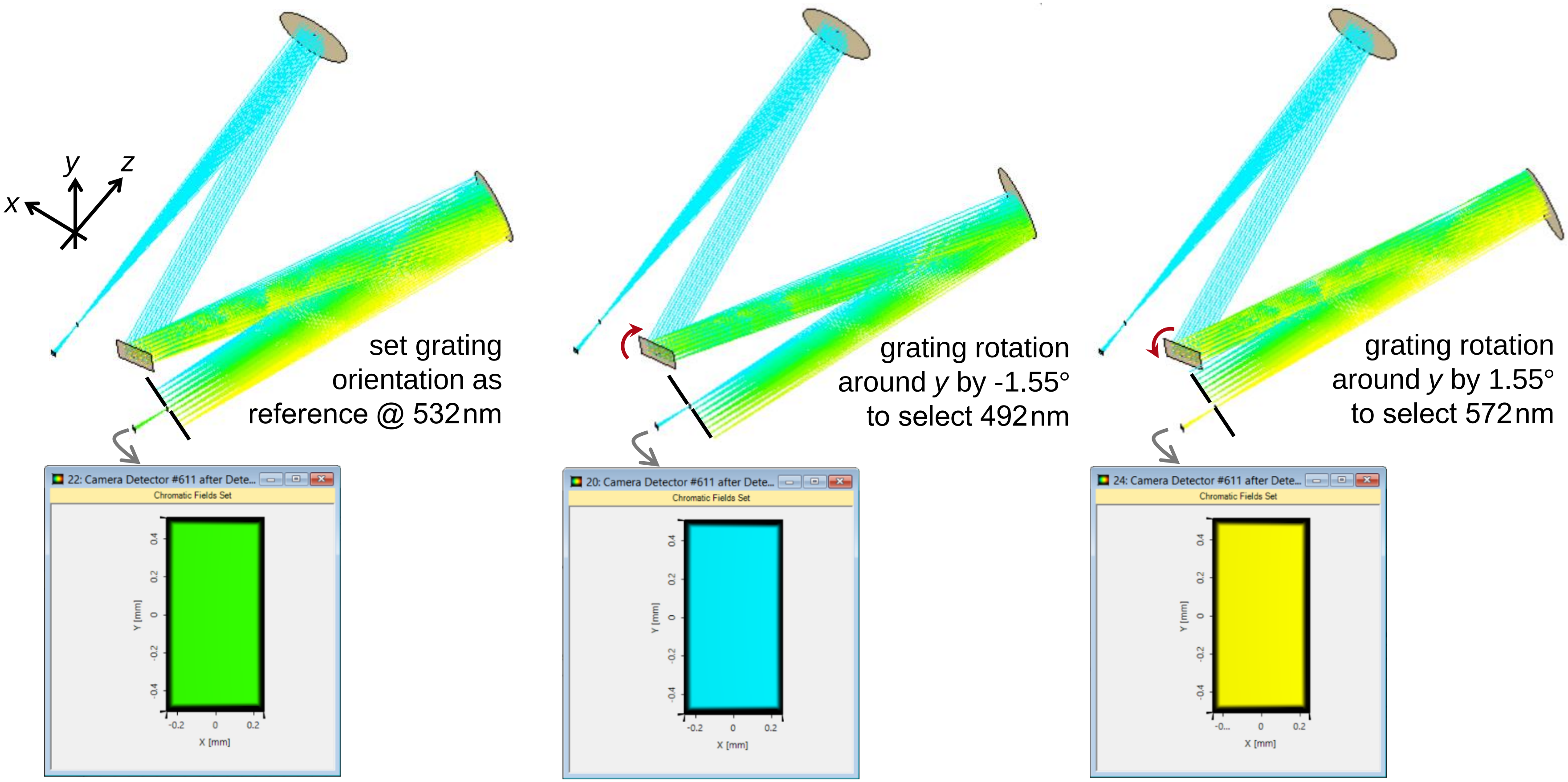


grating diffraction efficiency of R+1 order calculated with Fourier modal method (FMM) and integrated in the system simulation

simulation with 400 wavelengths takes ~ 470s
single-wavelength simulation takes ~1s

Results

- Wavelength selection by exit slit



Document Information

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