

Bragg Grating

Week 1

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OBJECTIVES

- Plot graphics based on the reference.
- Recreate theoretical graphics using INTERCONNECT.

THEORY

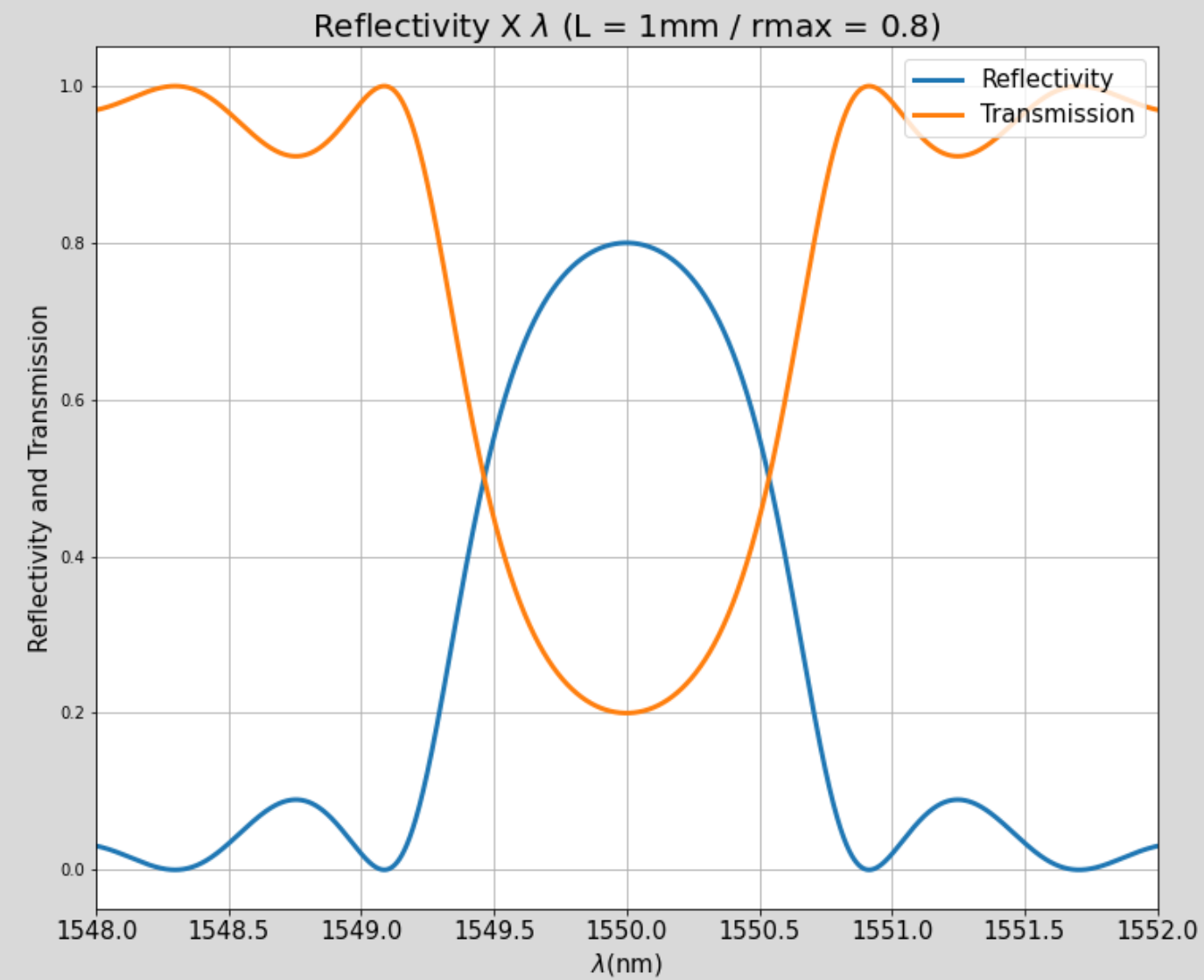
The bragg grating used in this project is an Uniform fiber bragg grating. With this component we can reflect the light in the desired wavelength, working as an filter.

The Parameters we can optimize and rmax and length.

$$r_{\max} = \tanh^2(kL)$$

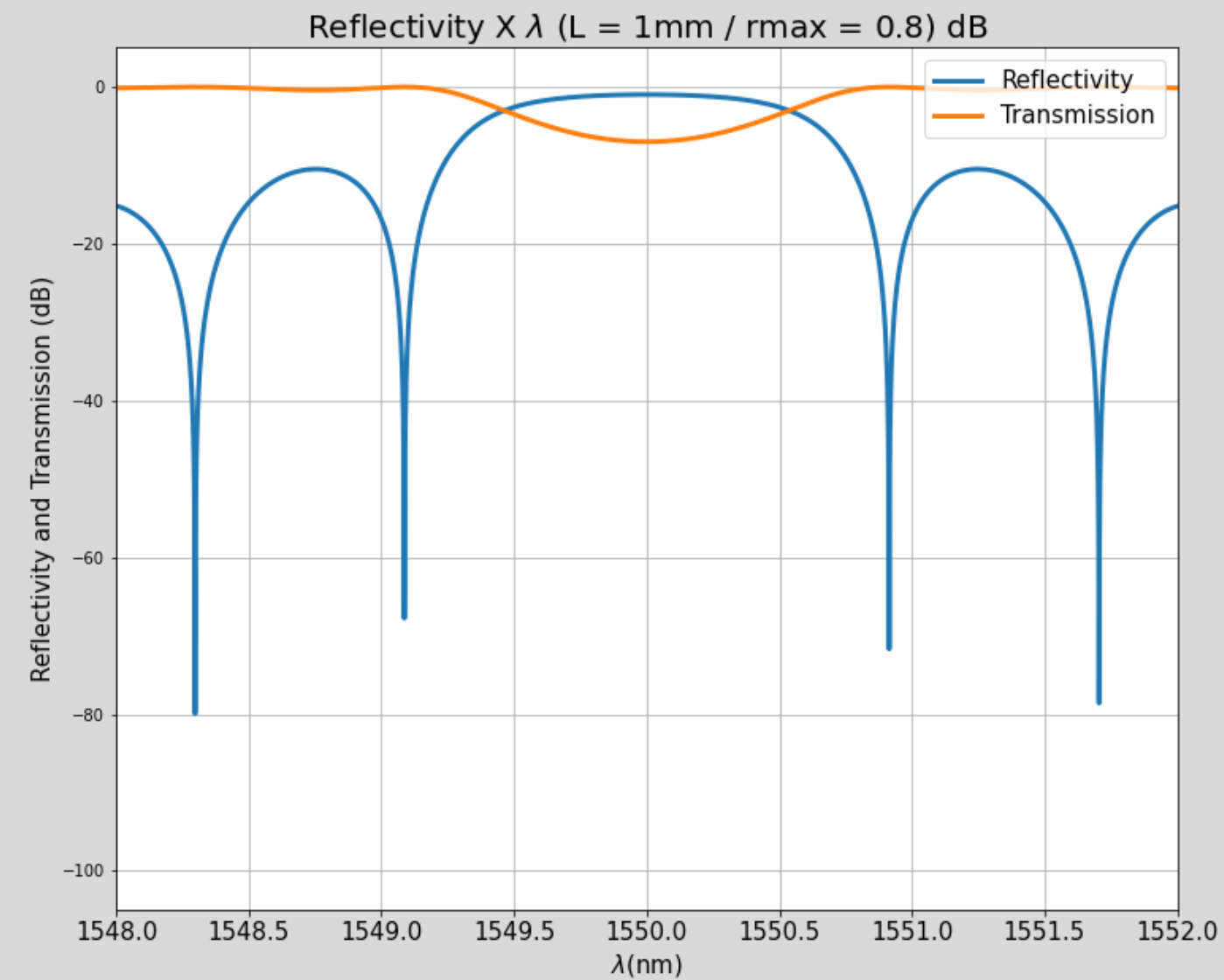
THEORETICAL GRAPHIC

$L = 1\text{mm}$ and $r_{\text{max}} = 0.8$



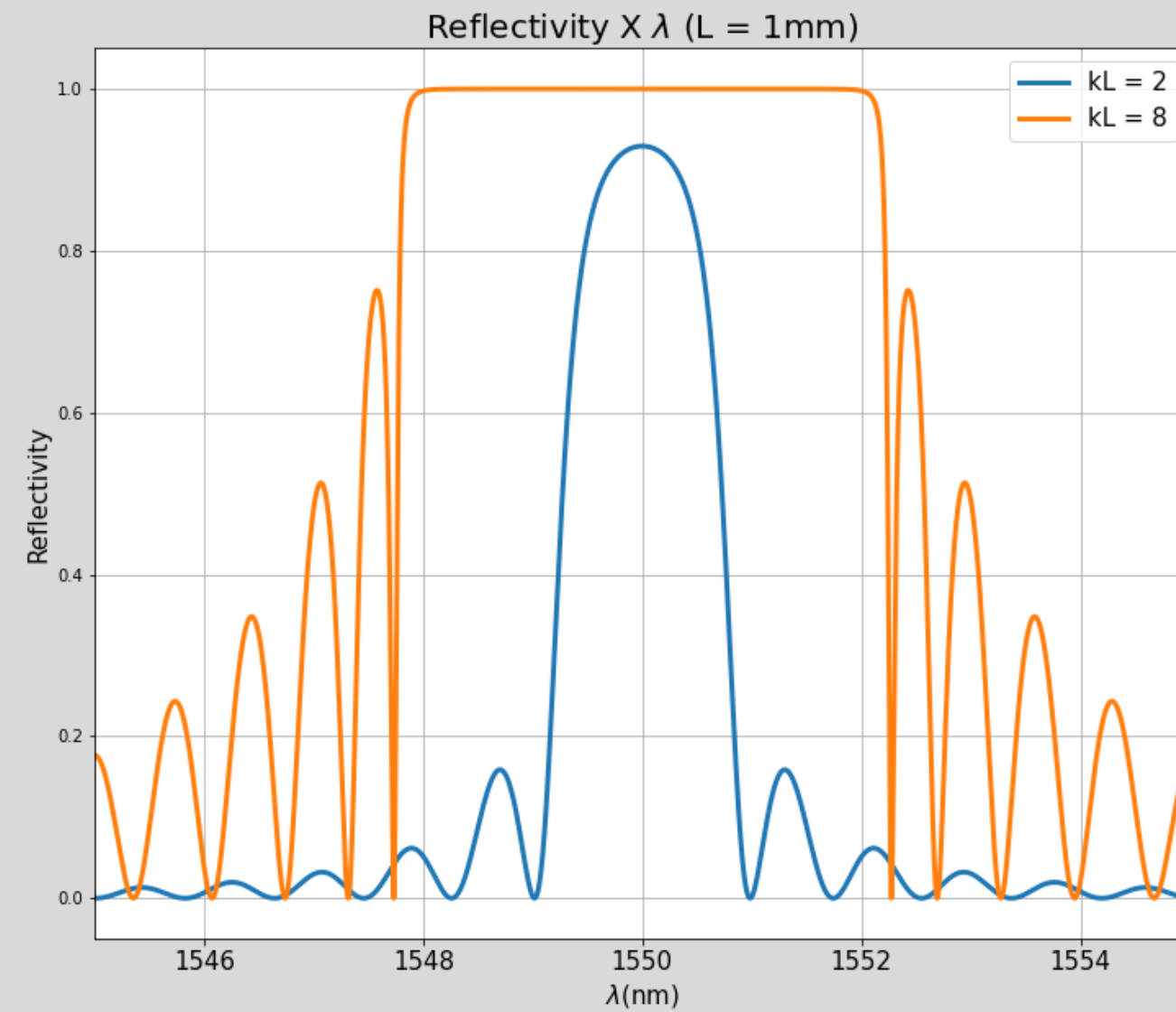
THEORETICAL GRAPHIC

$L = 1\text{mm}$ and $r_{\text{max}} = 0.8$ (dB)



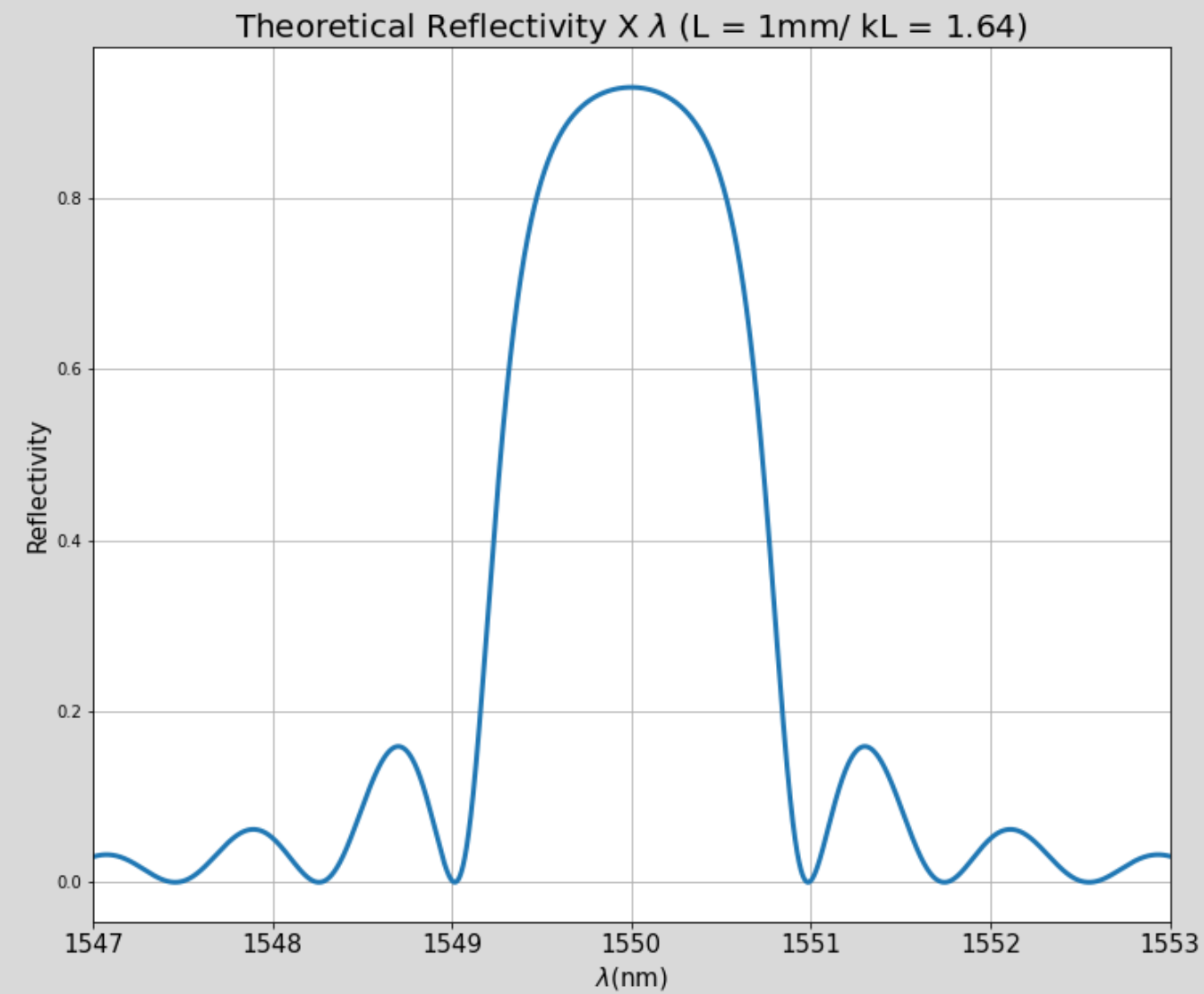
THEORETICAL GRAPHIC

Diferent kL values test



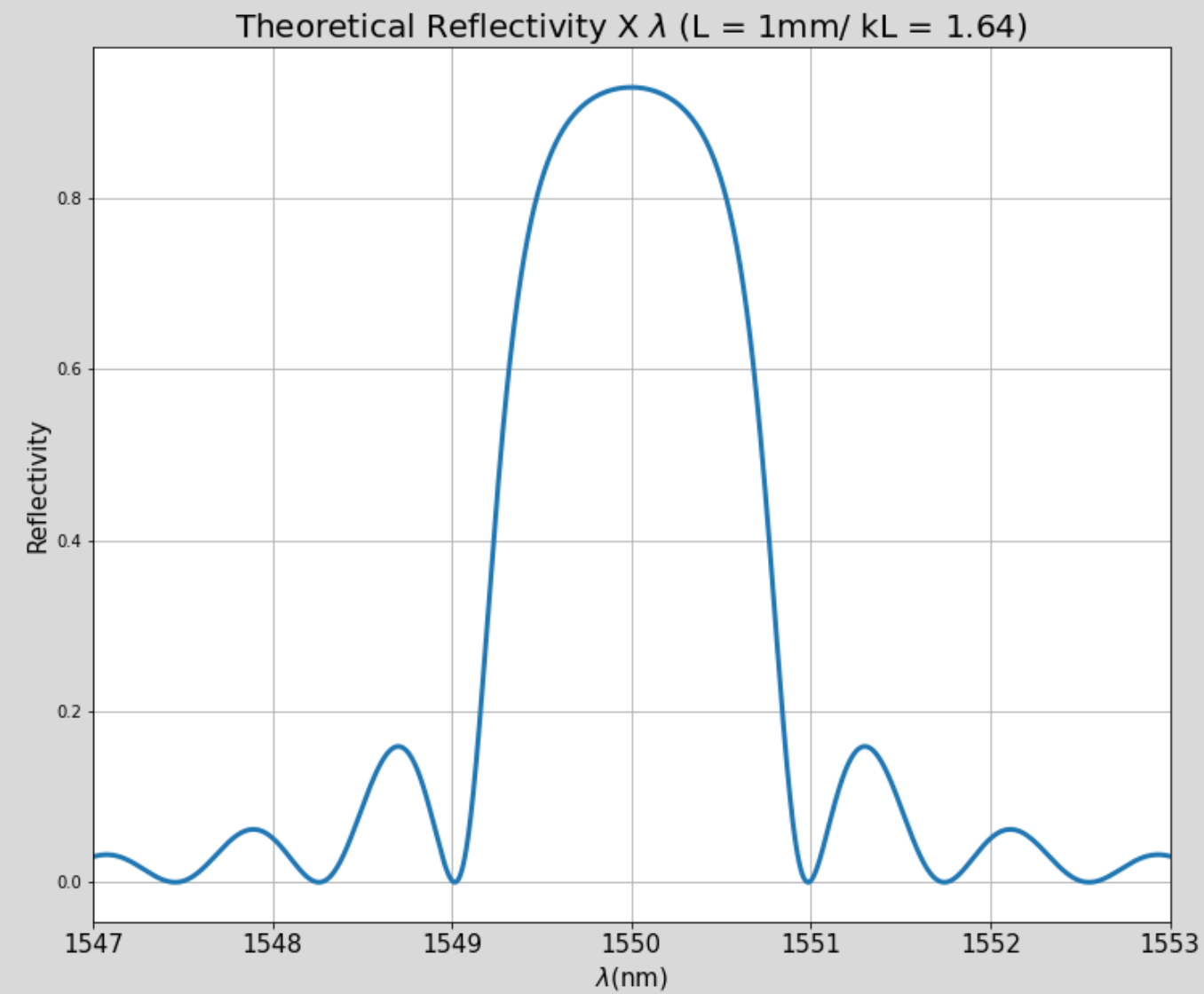
THEORETICAL GRAPHIC

$L = 1\text{mm}$ and $kL = 1.64$



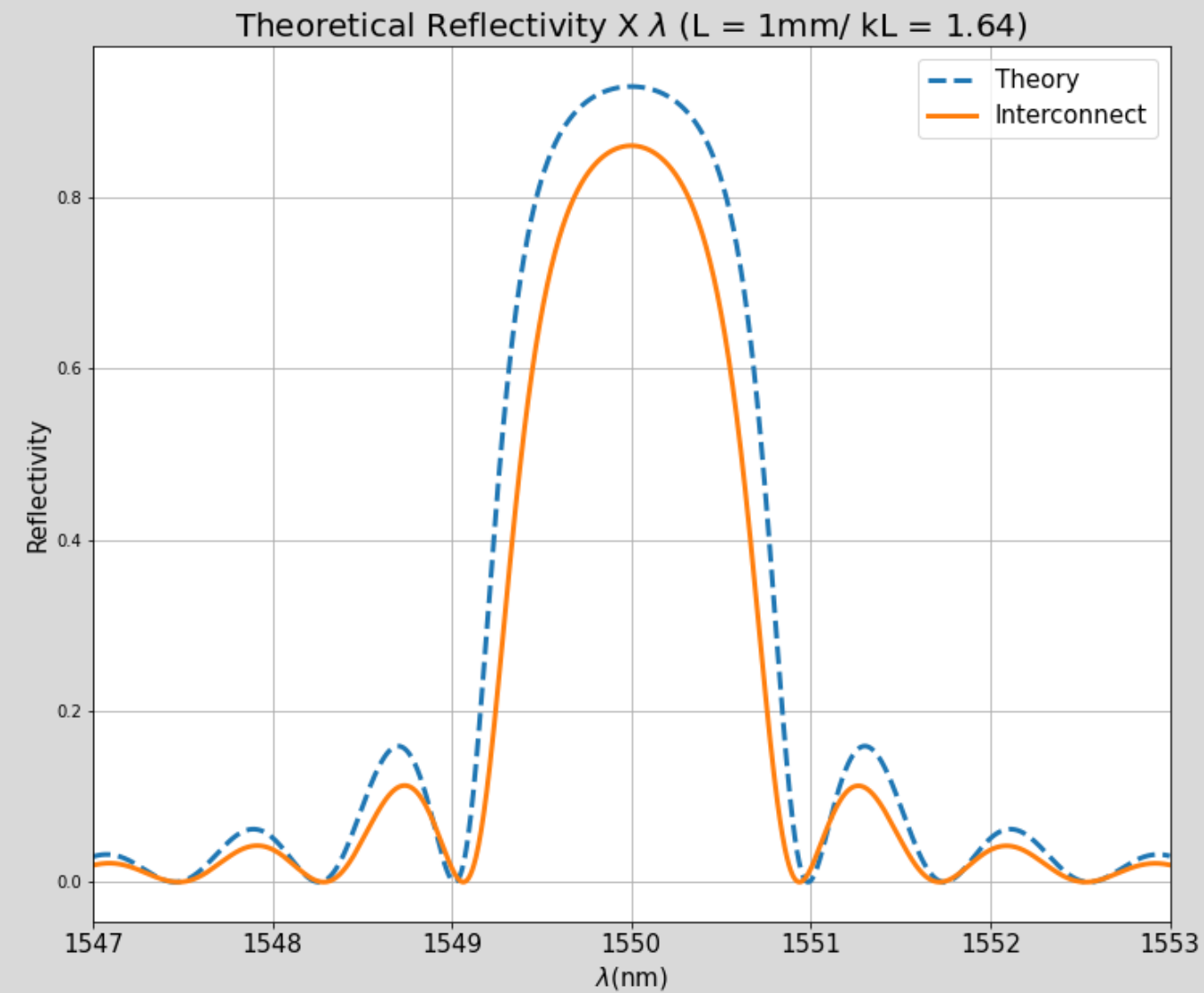
THEORETICAL GRAPHIC

$L = 1\text{mm}$ and $kL = 1.64$



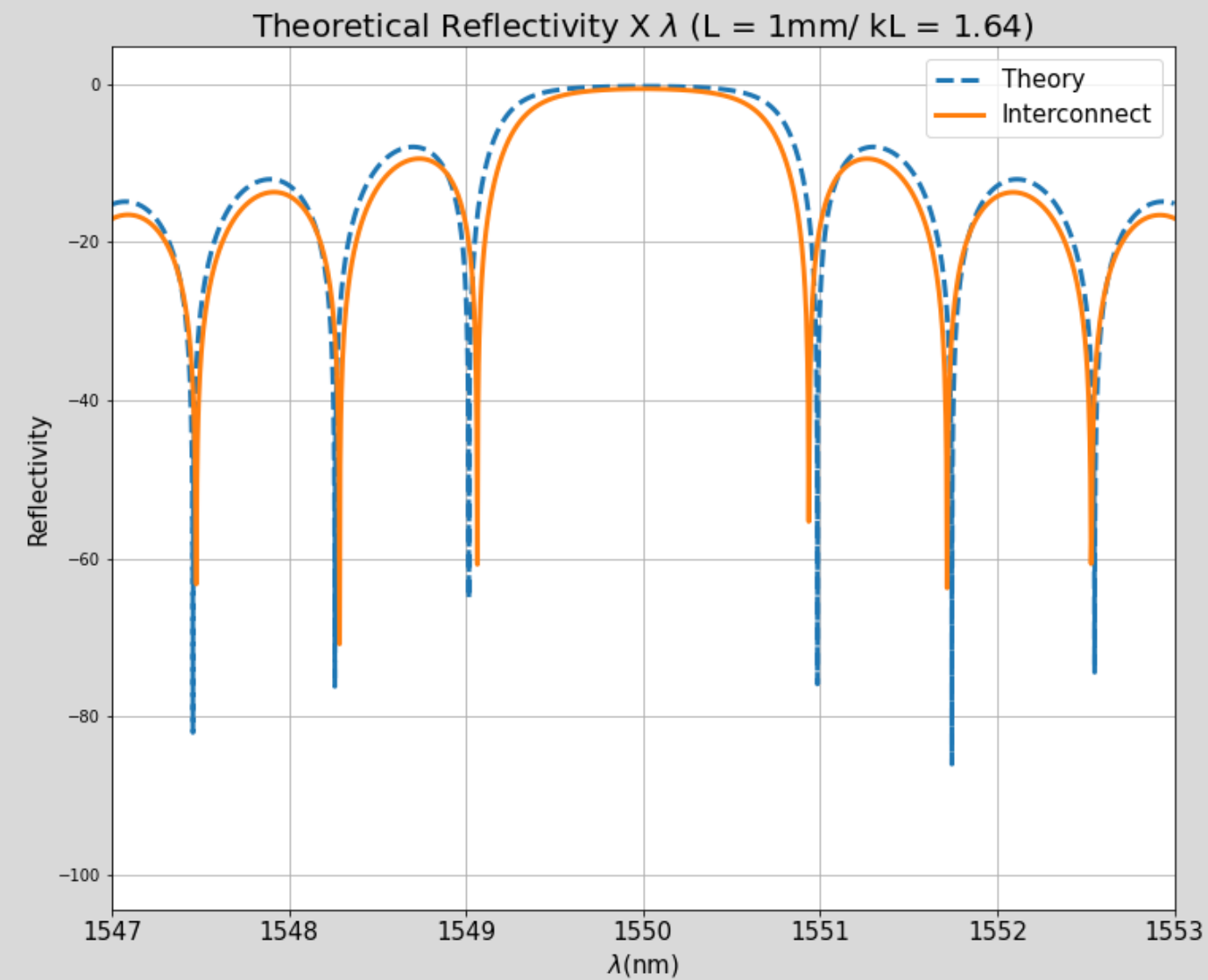
INTERCONNECT AND THEORY COMPARISON

$L = 1\text{mm}$ and $kL = 1.64$



INTERCONNECT AND THEORY COMPARISON

$L = 1\text{mm}$ and $kL = 1.64$ (dB)



CONCLUSION

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As we can see in previous slides, the theoretical values are very close to the simulated ones. Therefore, the results are satisfactory.