

Multi mode interferometer 2x2 Week 2

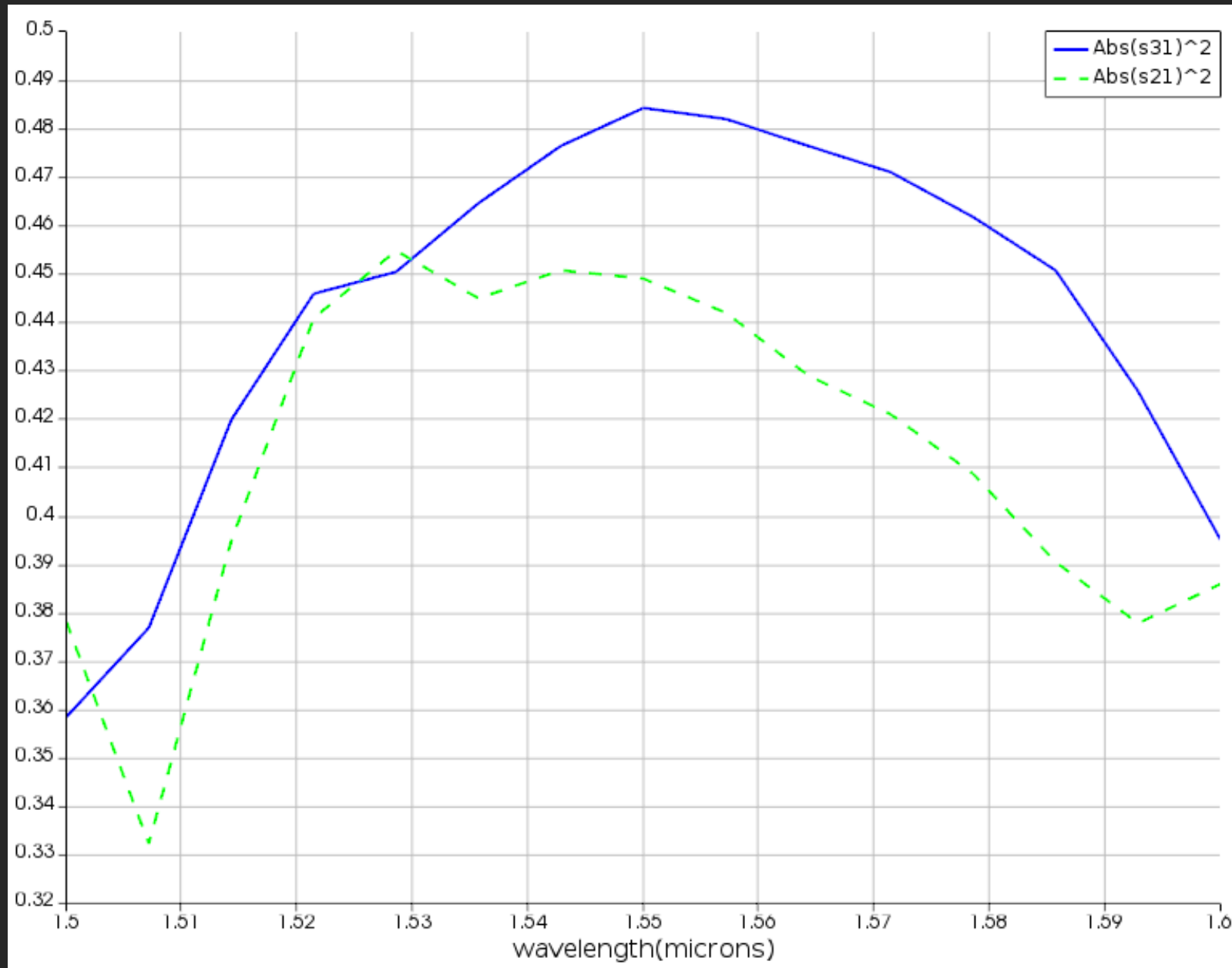
AUTHOR:

Leonardo Pessoa

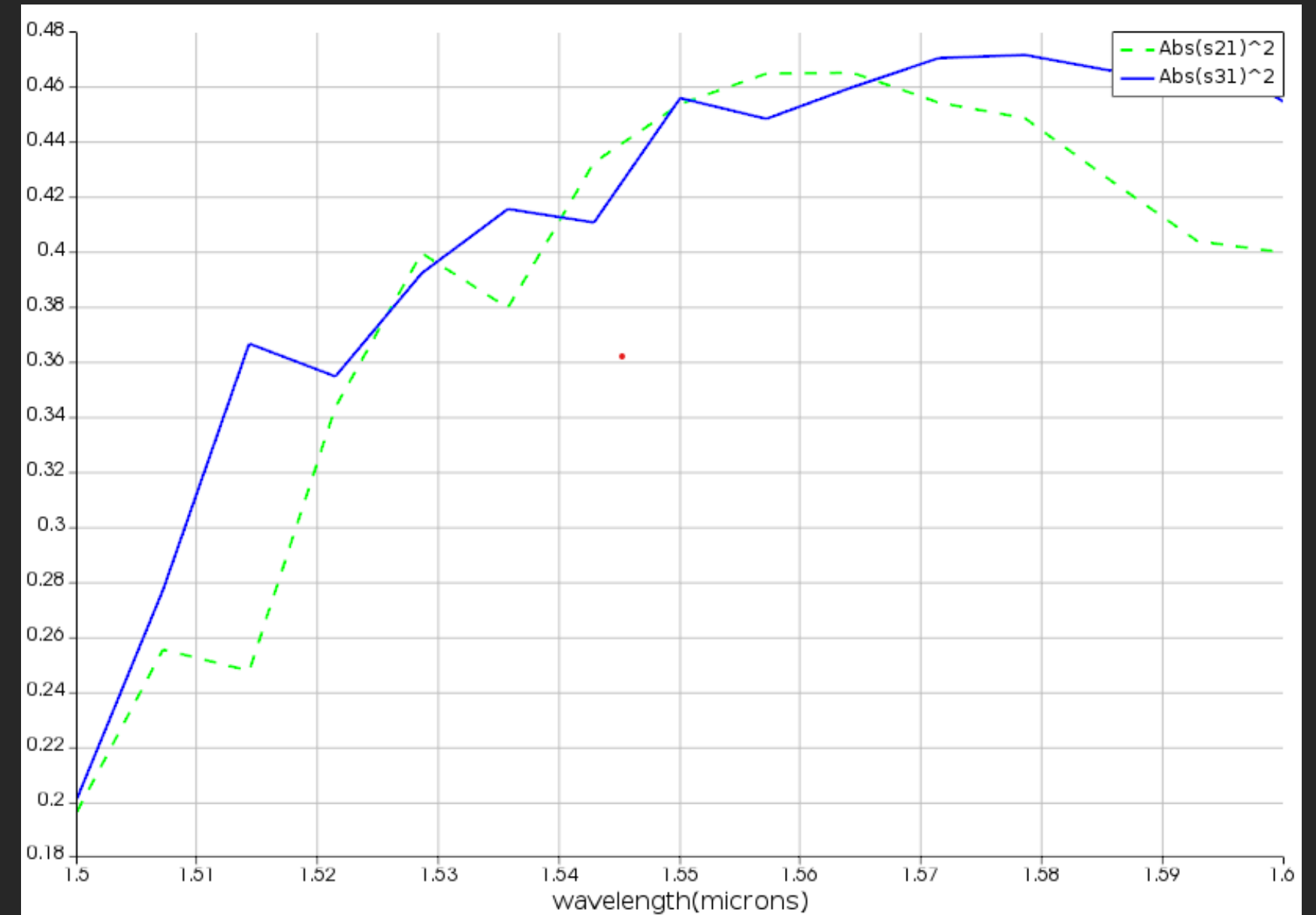
Modifications Made

- 1 Sweep The Guide width (W)
- 2 Test the most optimal width
- 3 Test Propagation sweep on $7\mu\text{m}$ W
- 4 Test Port width on $7\mu\text{m}$ Test taper
- 5 Compare with $9\mu\text{m}$ W original prototype

Width Sweep

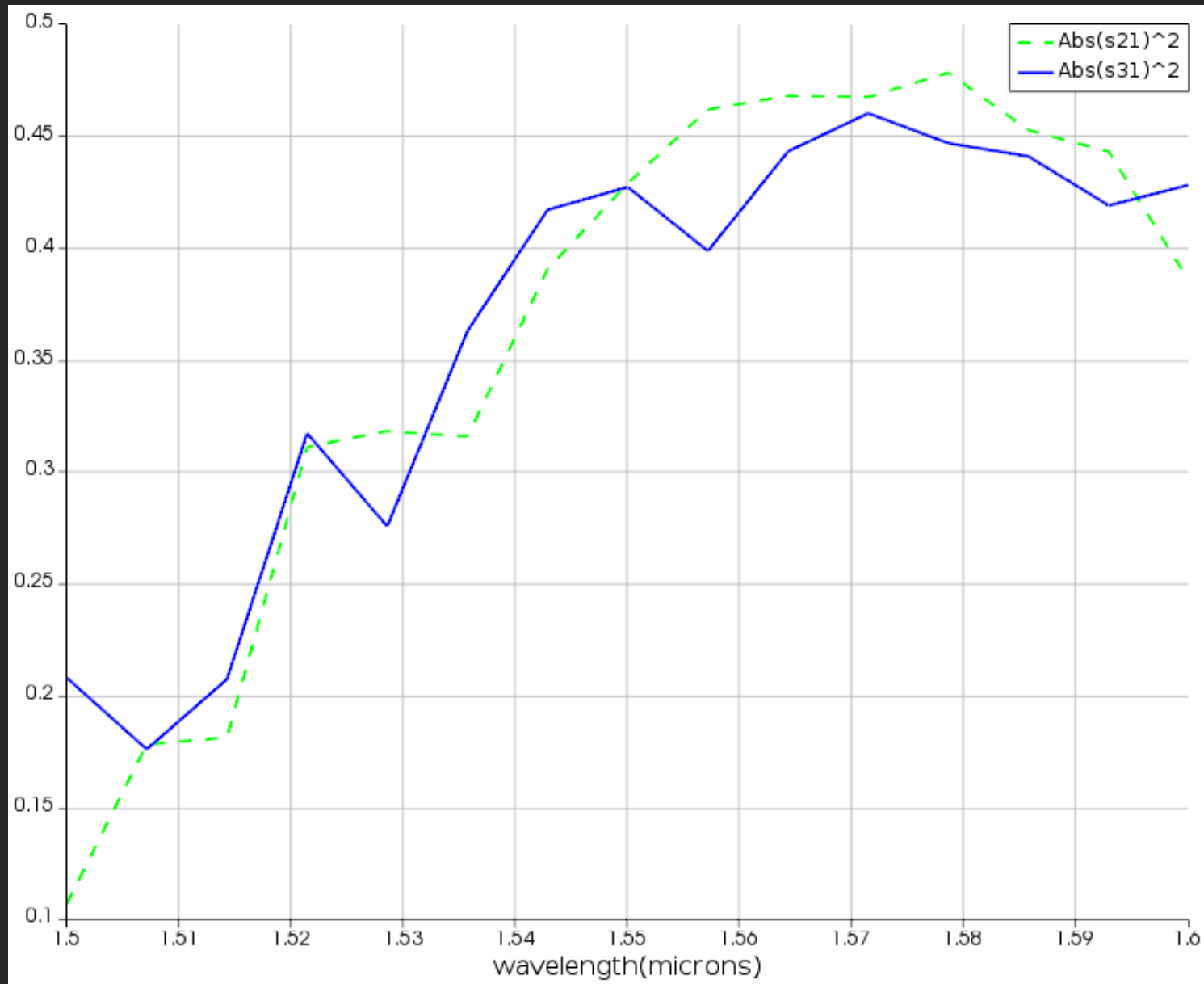


6μm

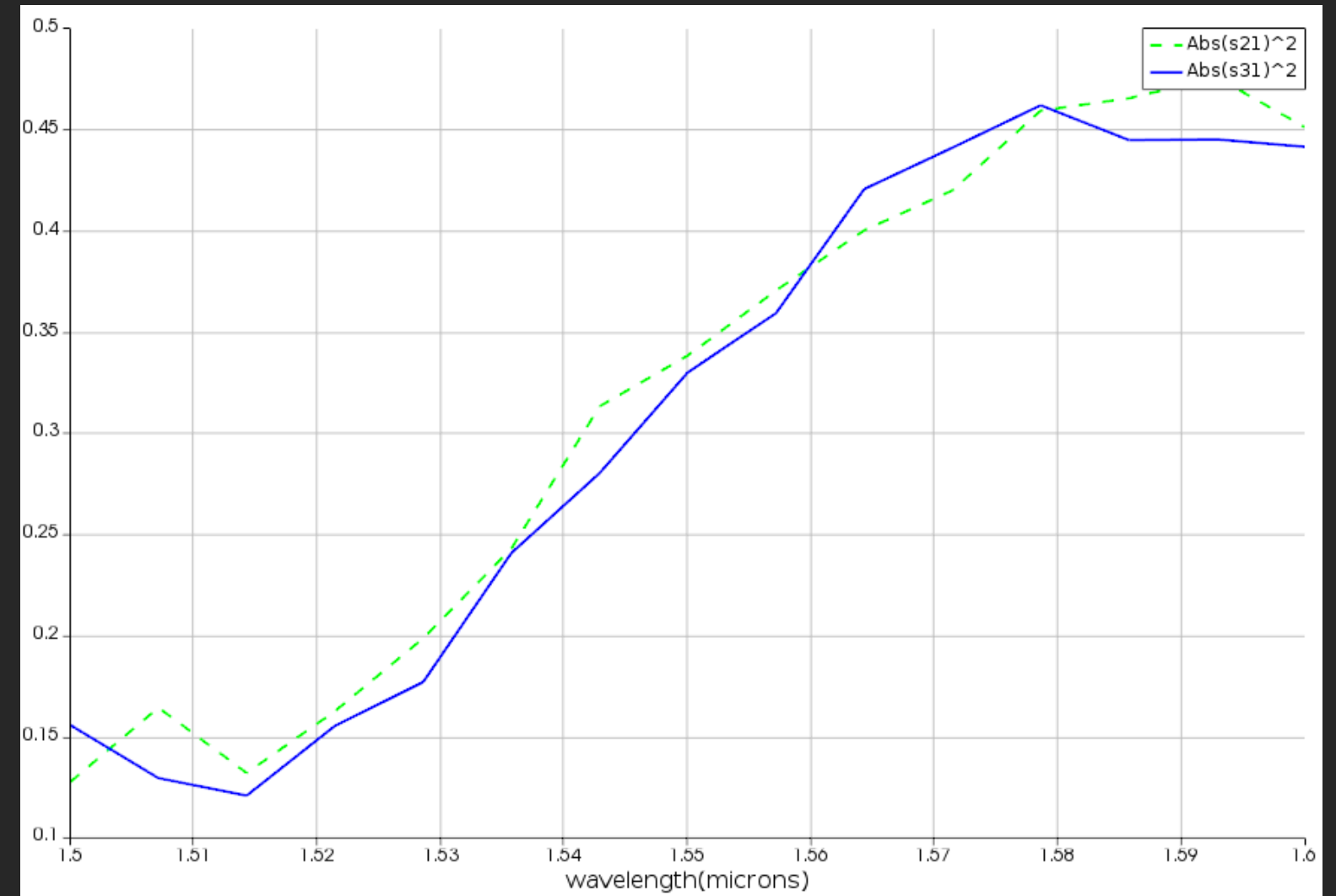


7μm

Width Sweep

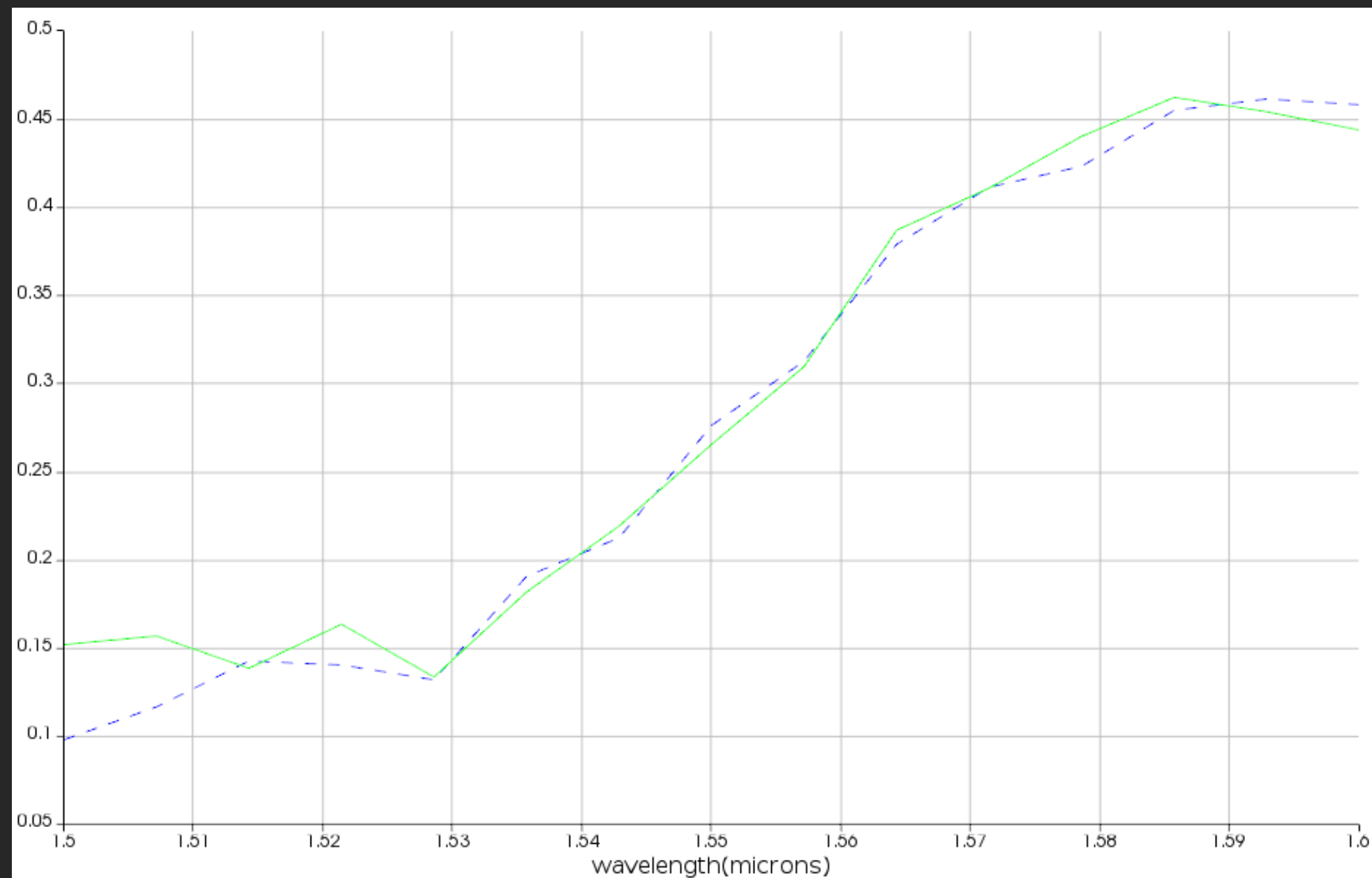


8 μ m



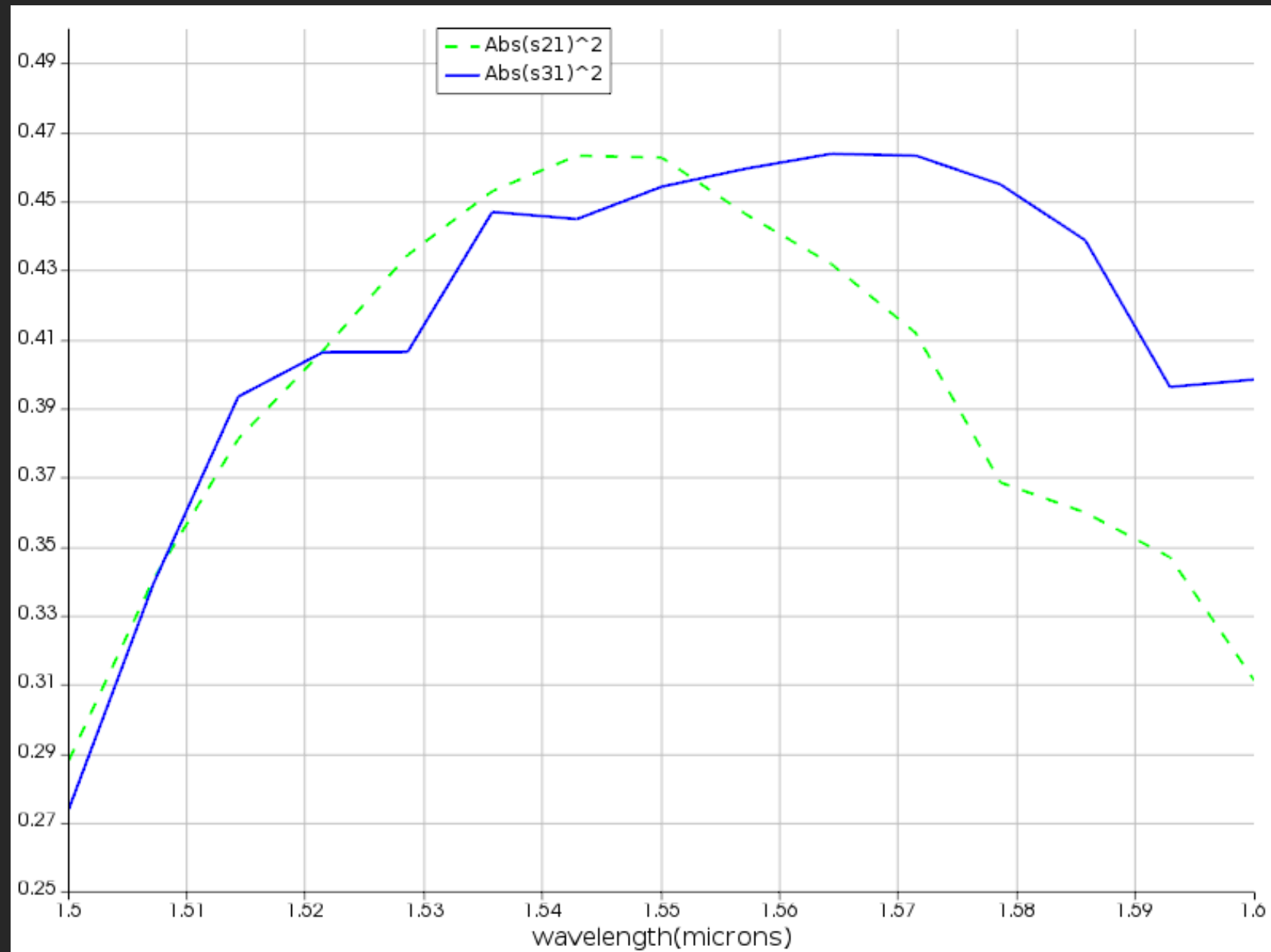
9 μ m

Width Sweep

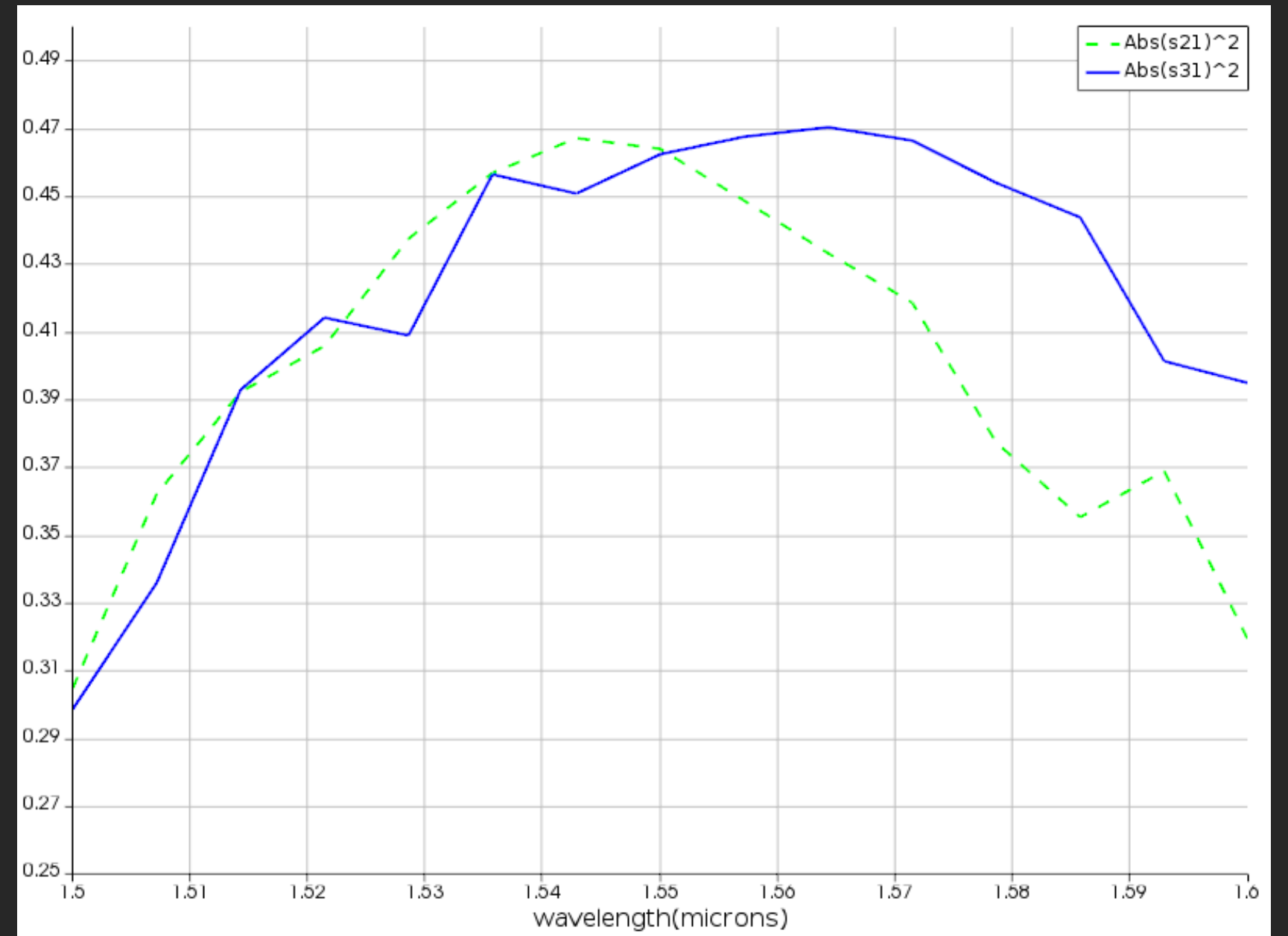


10μm

Port Wwg Sweep

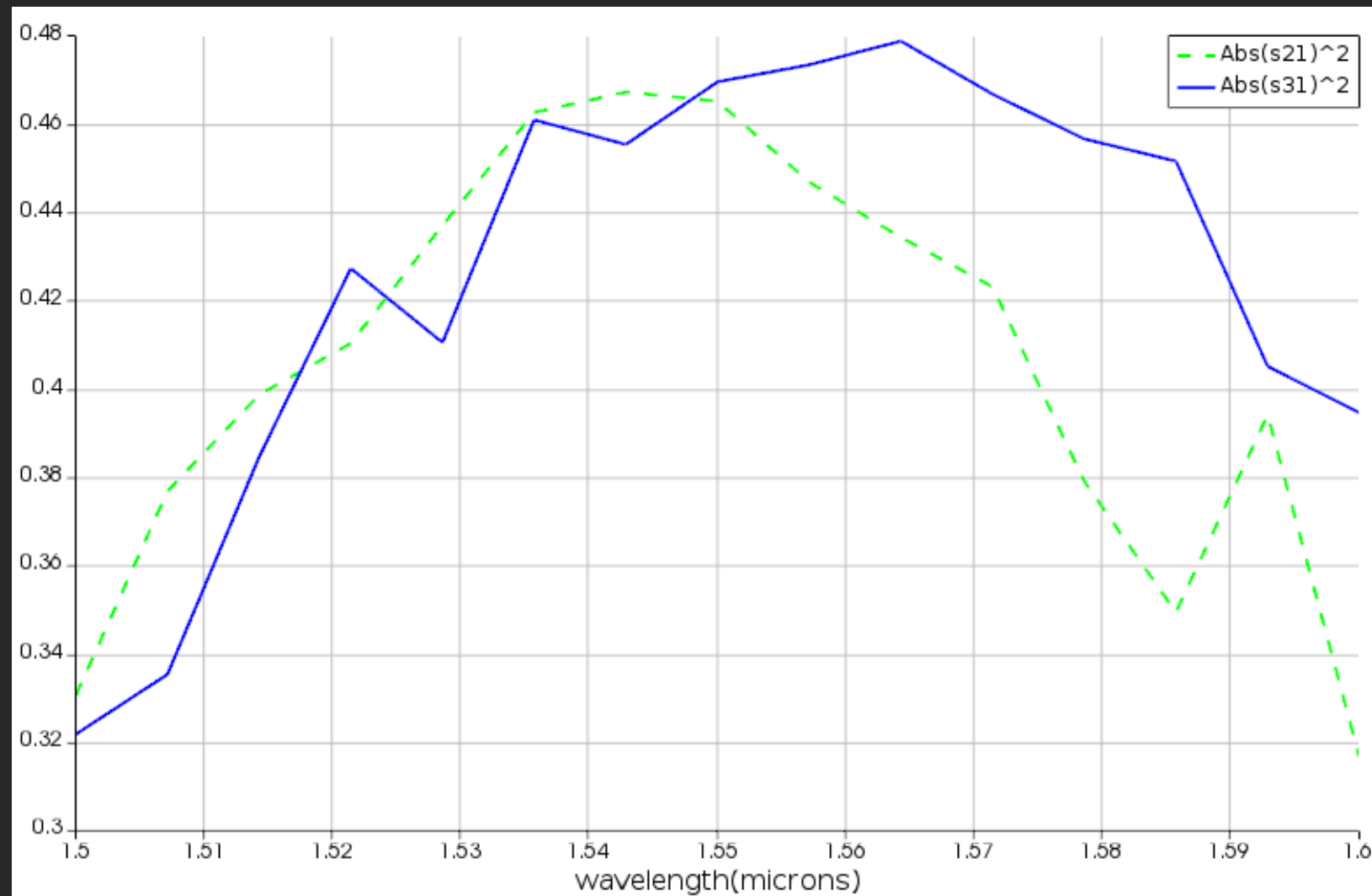


1.2μm

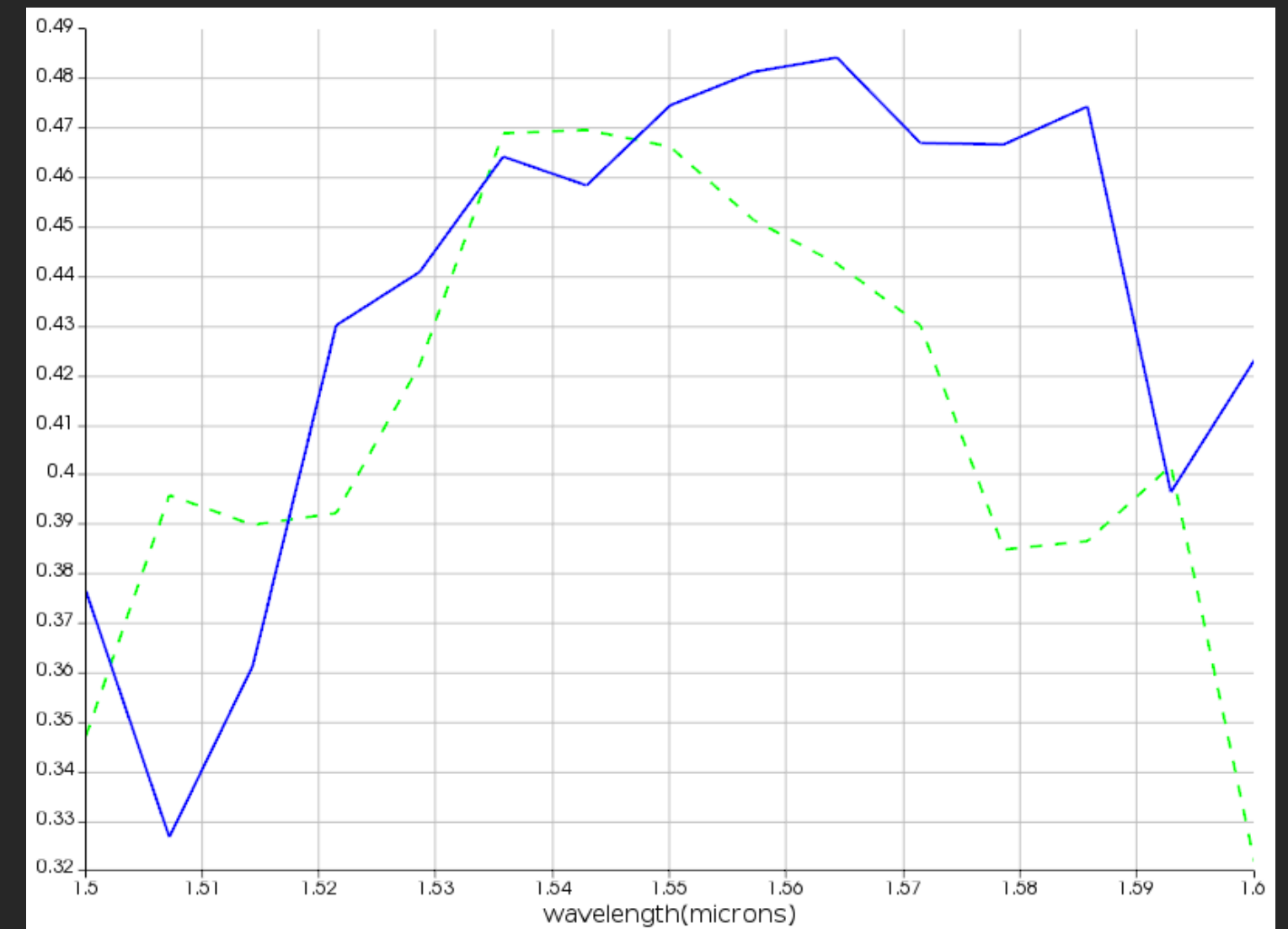


1.24μm

Port Wwg Sweep

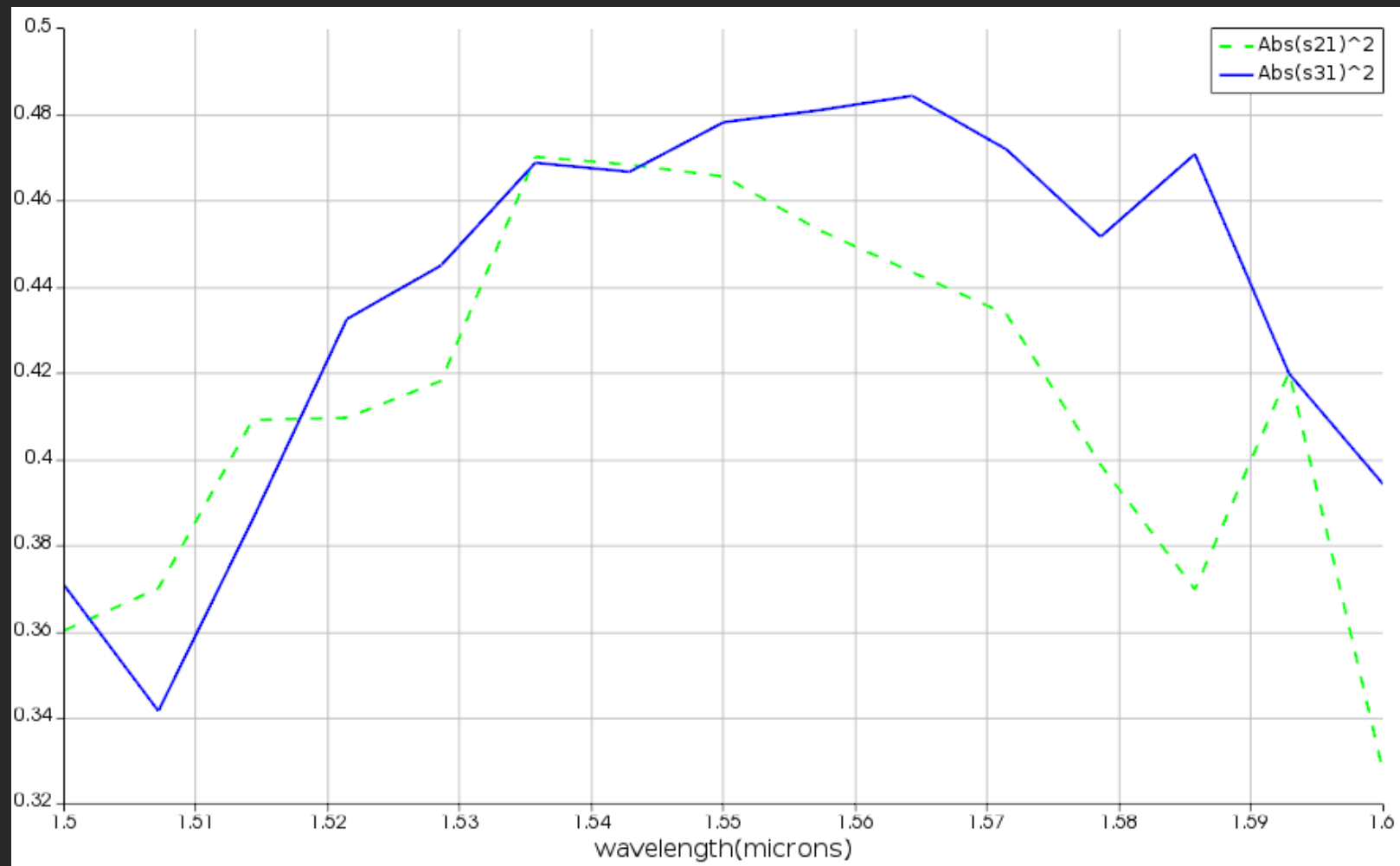


1.28 μ m

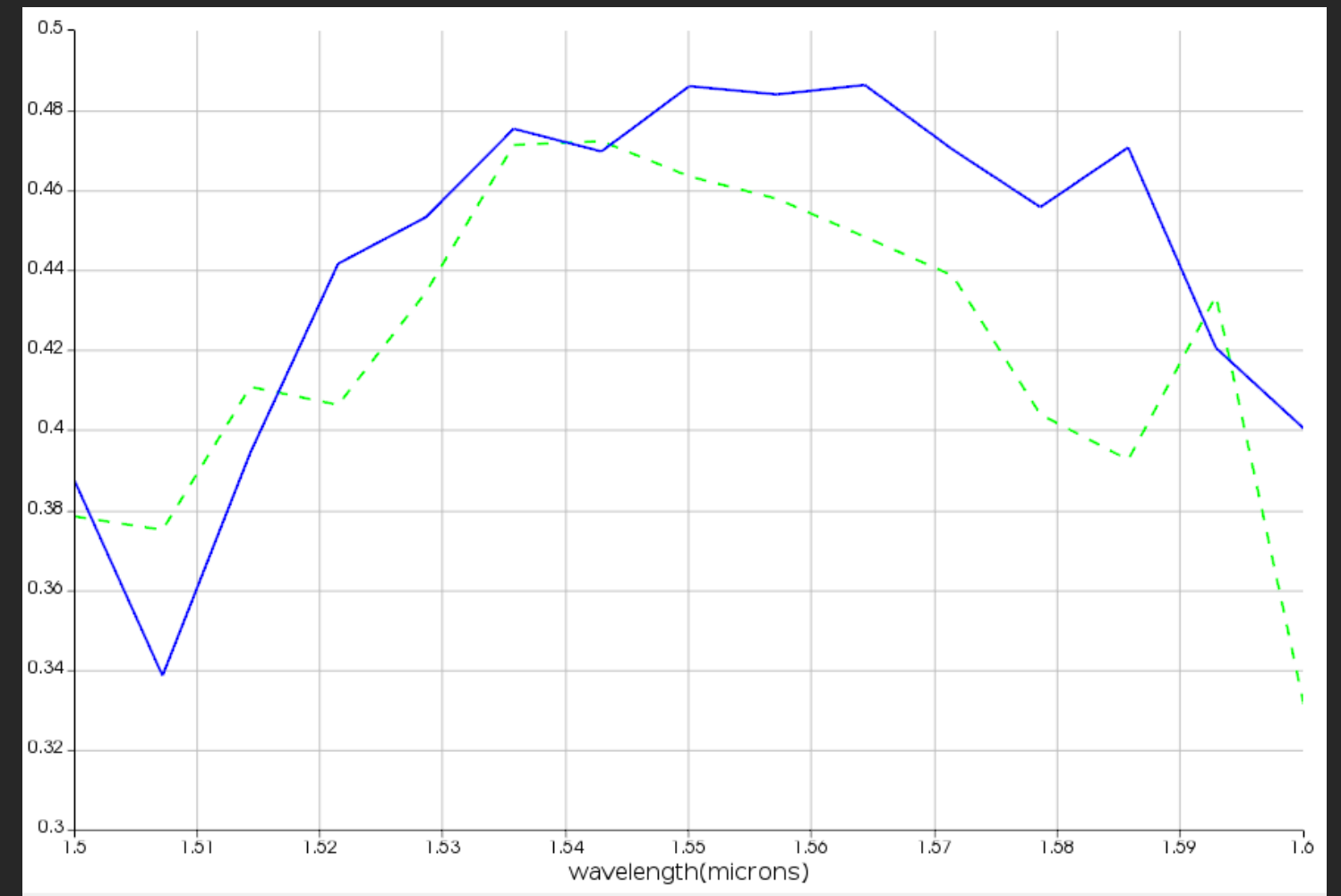


1.32 μ m

Port Wwg Sweep



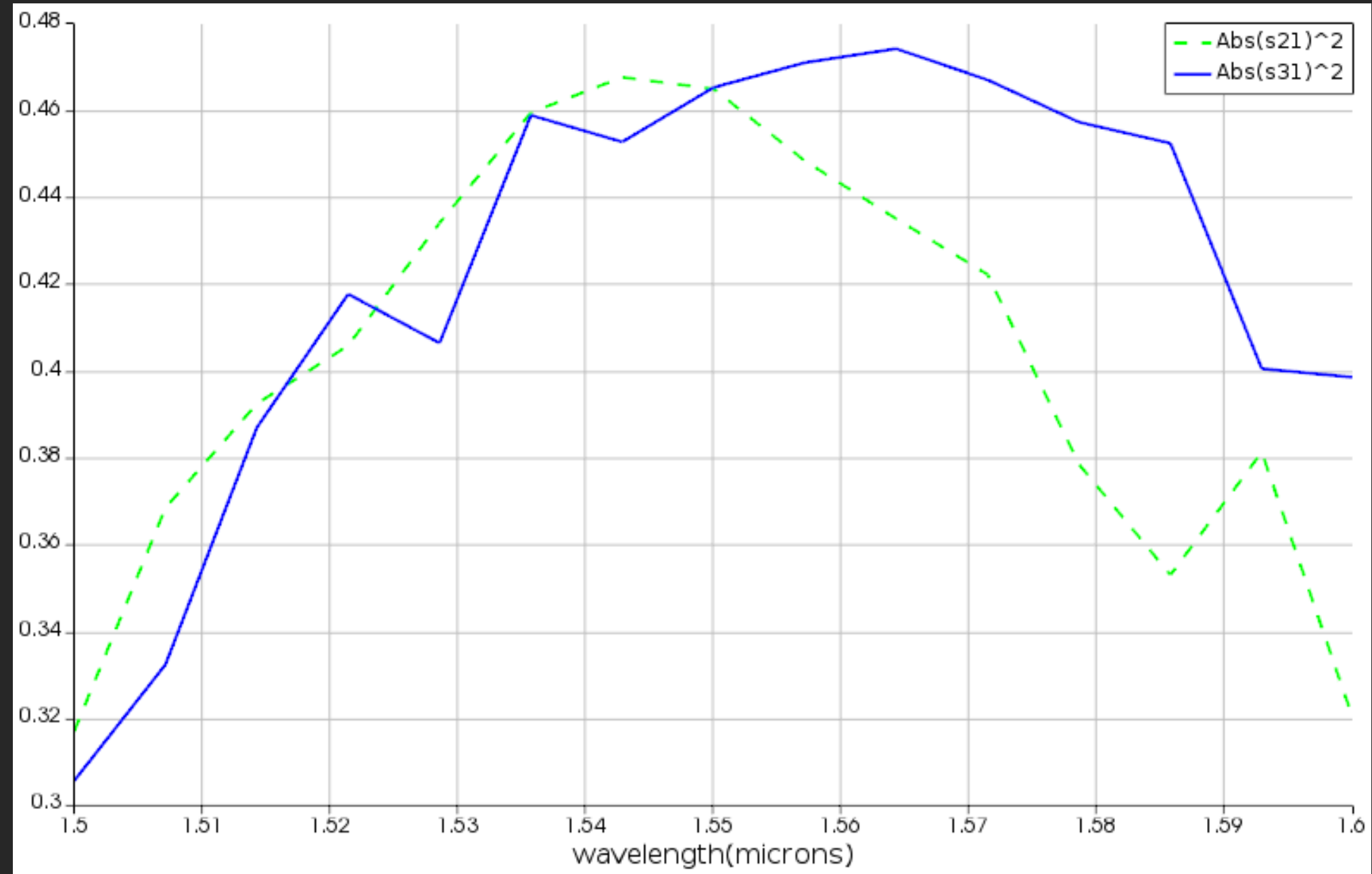
1.36 μ m



1.4 μ m

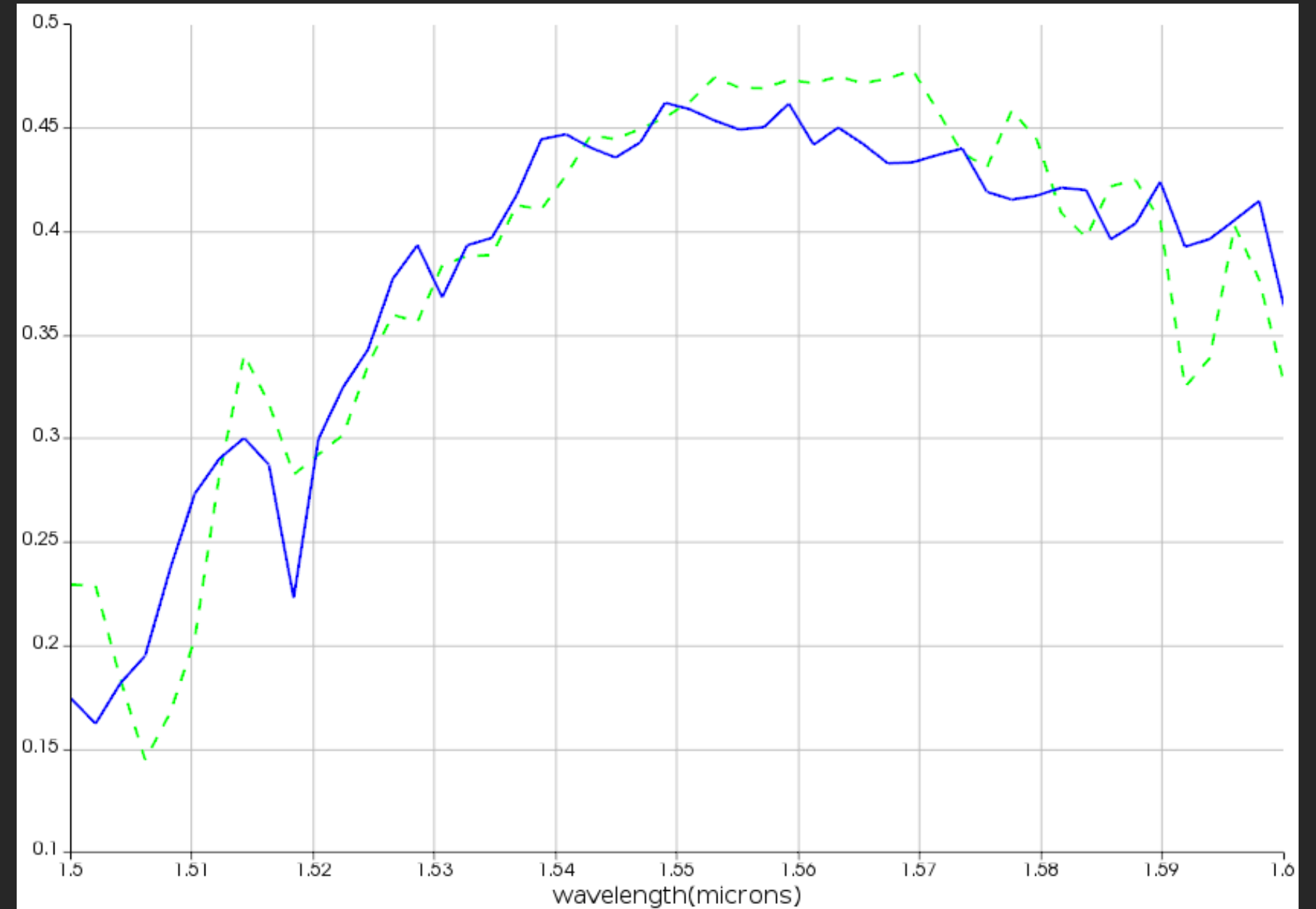
7μm After Propagation Sweep

1.24μm Wwg



9μm After Propagation Sweep

- Port 1 : 0.4649076511640
- Port 2 : 0.4492637827302
- Port 1 (Db) : -3.326333064
- Port 2 (Db) : -3.474985905



Conclusion

Width Sweep

In the Width Sweep, the 7 μ m graph was the best to optimize in my initial thoughts. However, the optimization results was not very satisfactory, diverging a lot after 1.55 μ m .

Optimization comparative

The guide originally made with 9 μ m width seems to have better results overall against the 7 μ m test. Therefore, in this project, we will continue to optimize the original one.