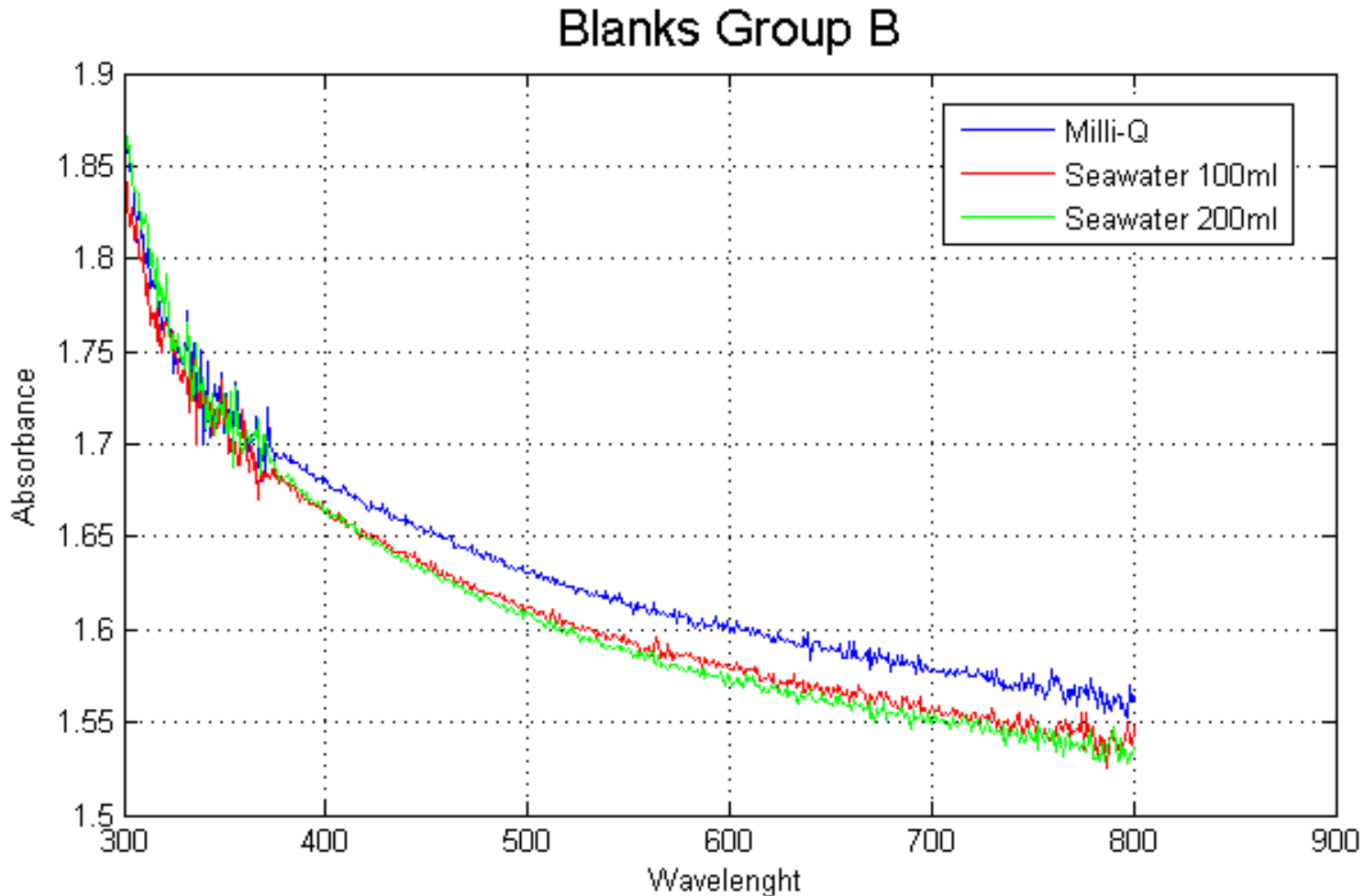
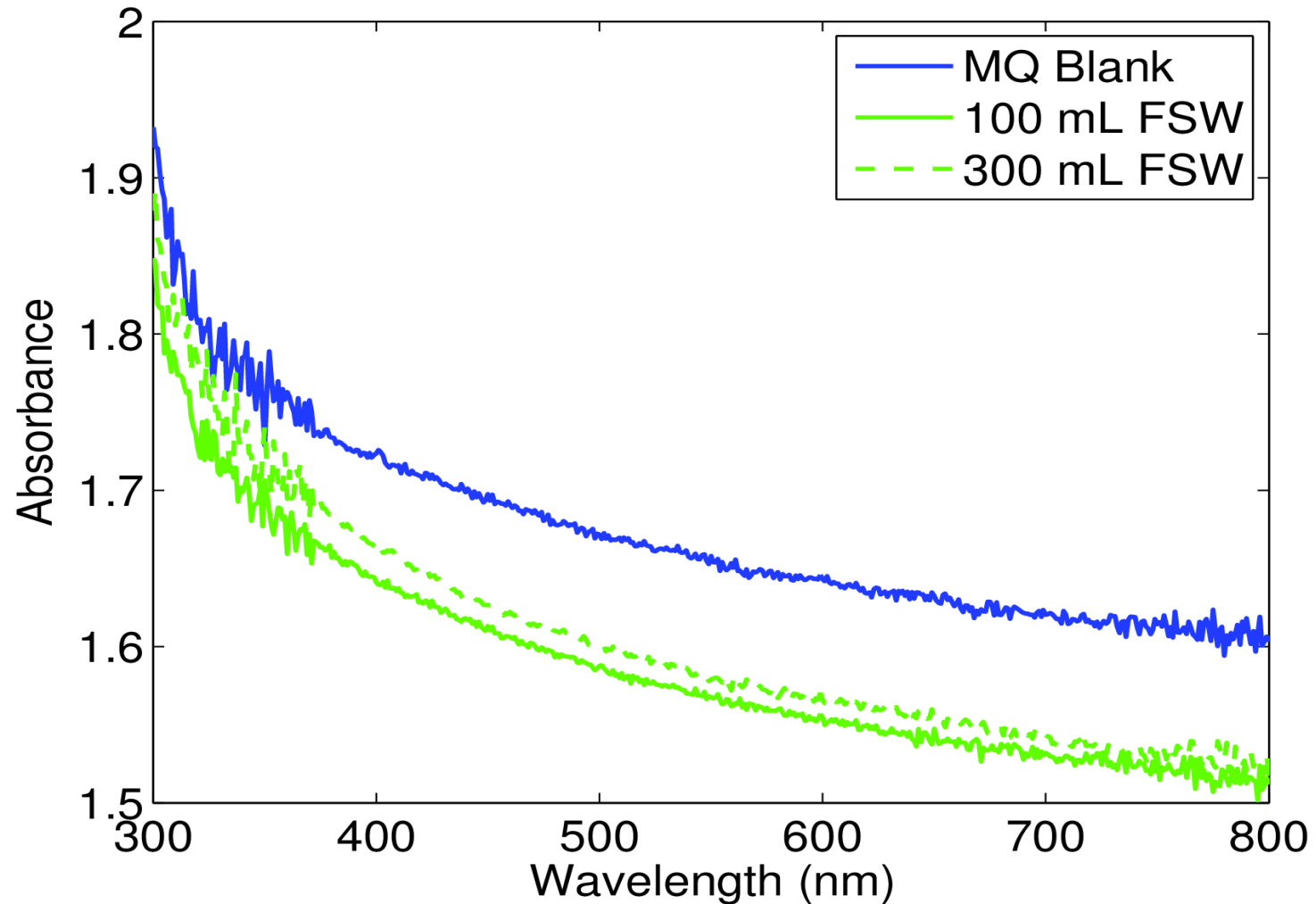


# 1. Blanks Comparison



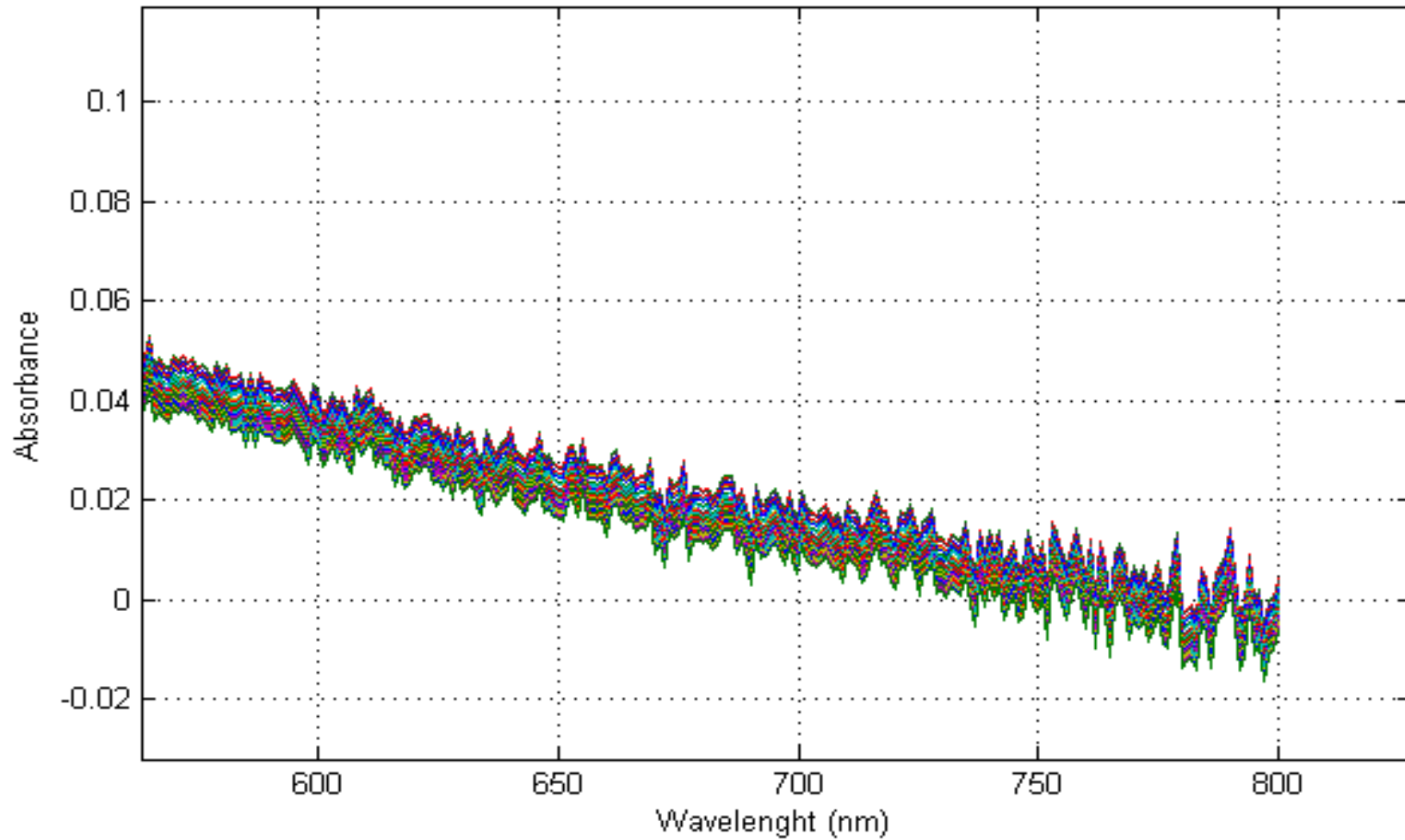
Milli-Q water was consistently higher than the Sea Water blanks  
Ideally, we would consider the Sea Water blanks at the same volume for each filter.

# 1. Blanks Comparison

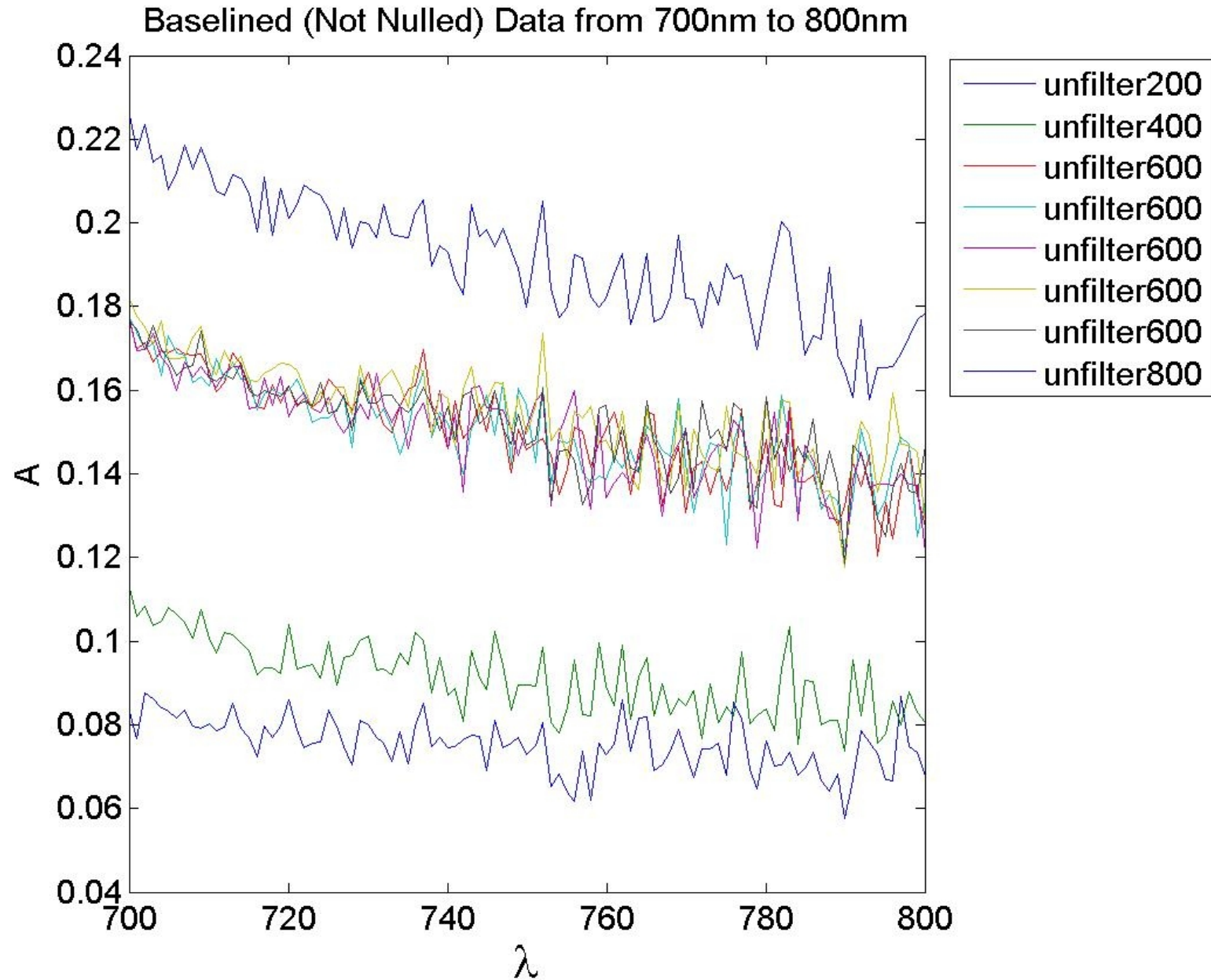


# 2. NIR Blanks

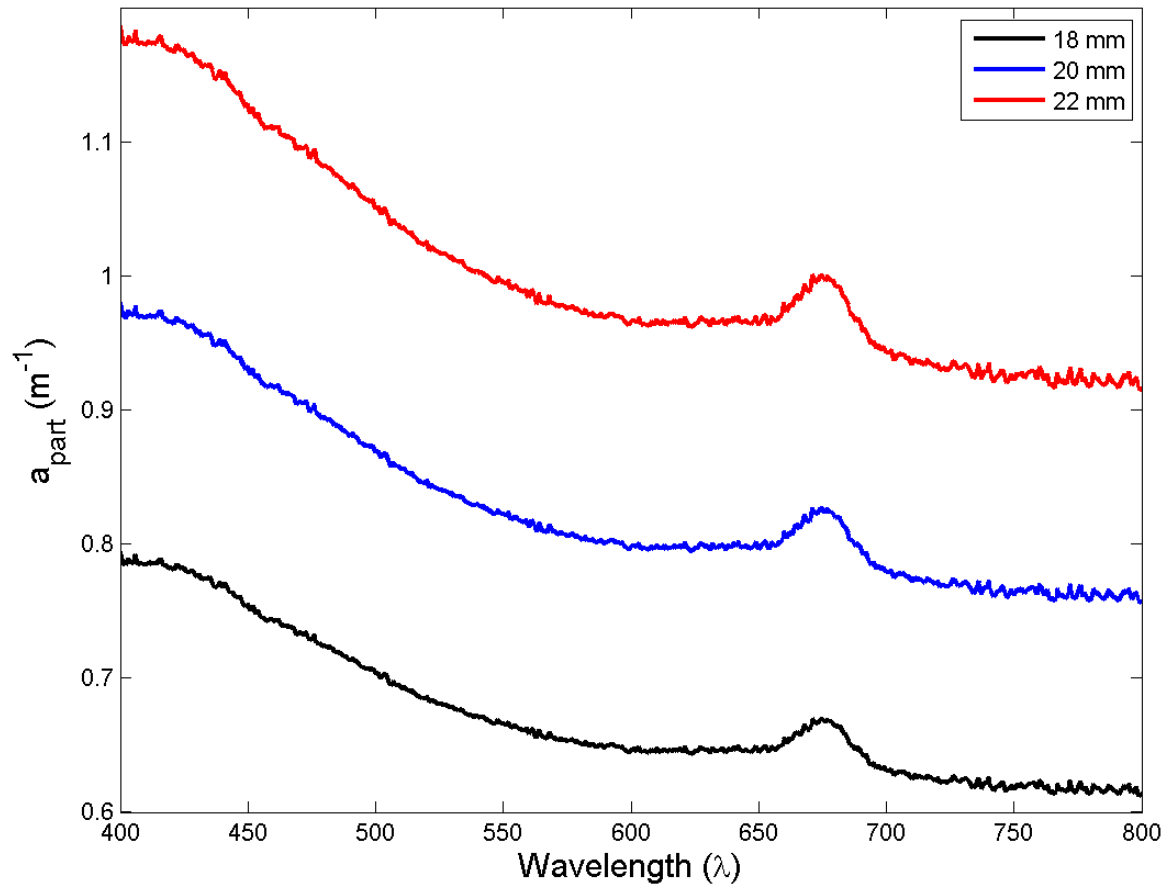
Blank Salt Water 200ml - Wavelength Variation



# 2. NIR Samples



### Effect of Errenous Filter-Diameter Measurements



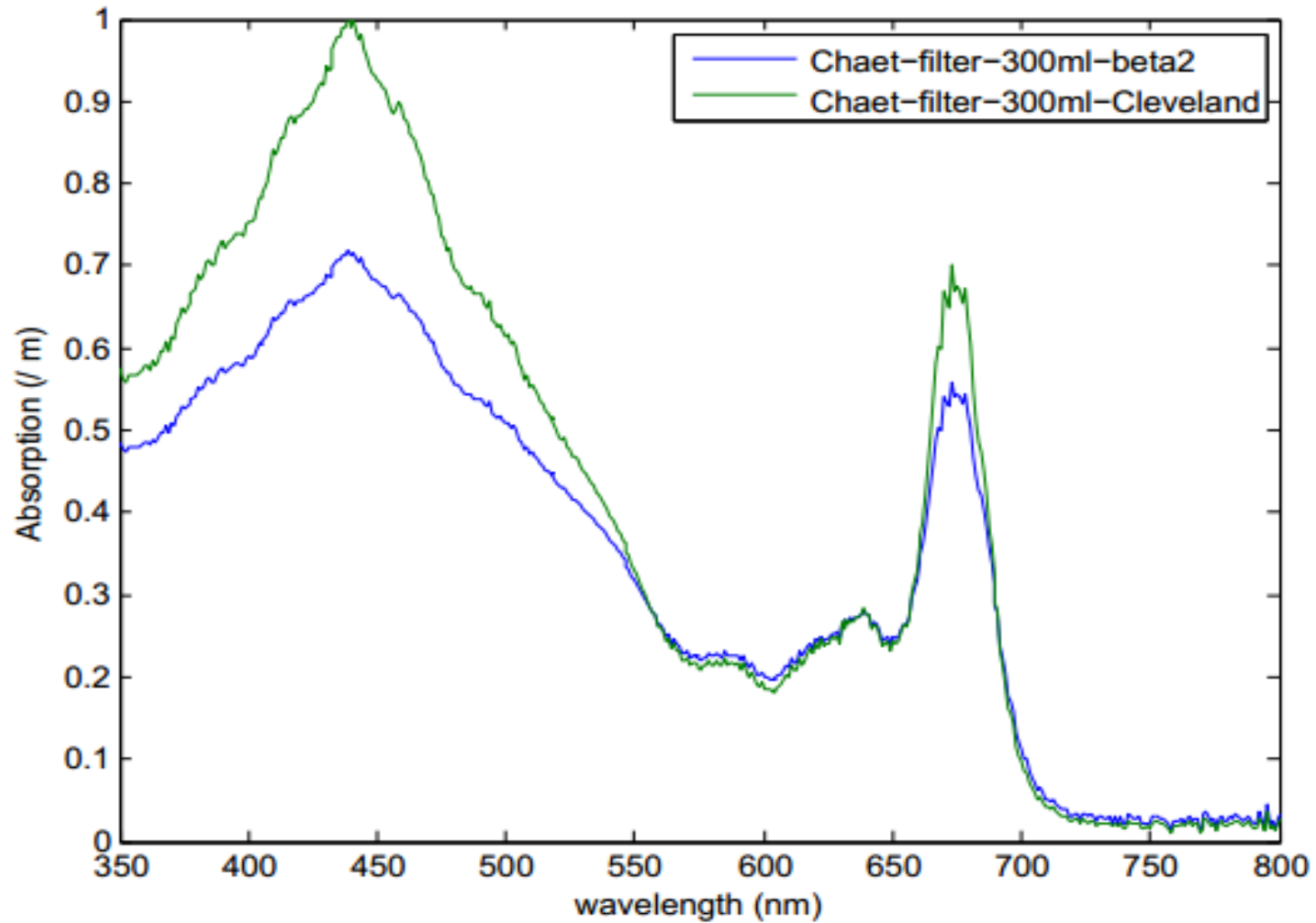
**Question 3:** What is the effect of an error in the measurement of the filter diameter? ( $A = \pi r^2$ )

An error in the measurement of the filter diameter causes an *apparent* change in optical pathlength without an associated *real* change in  $A_{\text{sample}}$ . Therefore you get an inaccurate calculation of total particulate absorption ( $a_{\text{part}}$ ) where normally  $a_{\text{part}}$  is independent of pathlength.

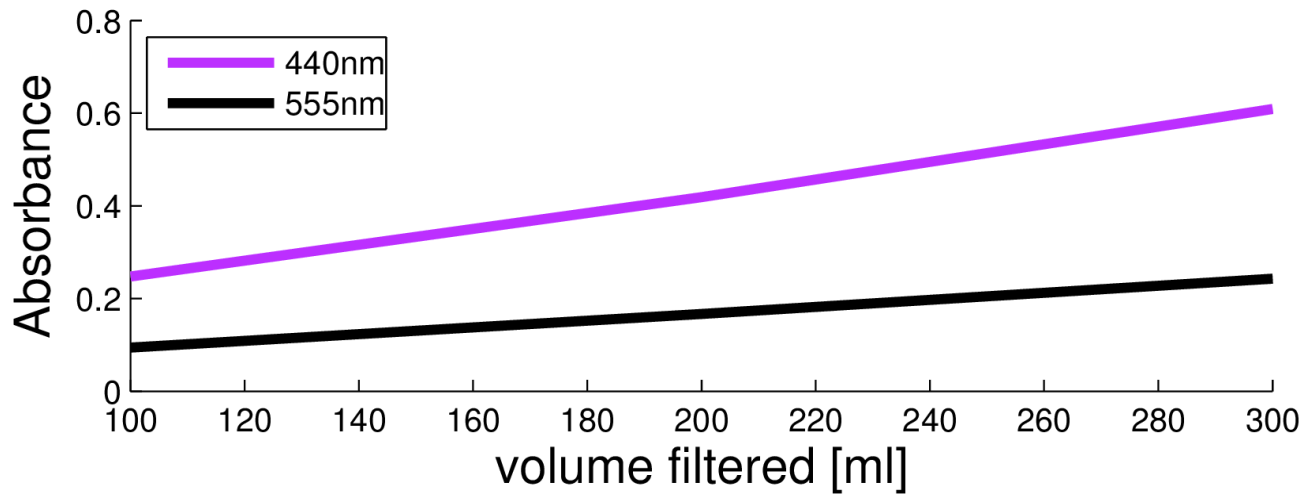
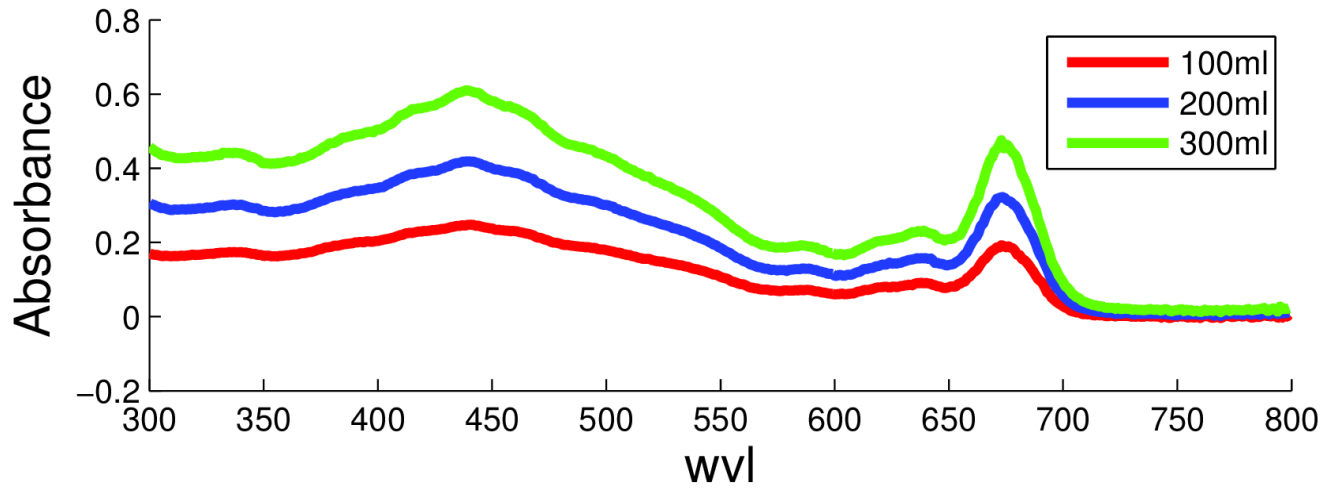
For this sample profile (800 mL of DRE field water, chaetoseros), a 10% error in sample diameter resulted in ~20% error in  $a_{\text{part}}$ . It did not appear to change the shape or magnitudes of the curves.

$$\text{pathlength} = \frac{\text{Volume filtered (cm}^3\text{)}}{\text{Area of the filter (cm}^2\text{)}} \quad a_{\text{part}}(\lambda) = \frac{2.303 * 100}{\text{pathlength} * \beta} * \{ A_{\text{pad}}(\lambda) - [A_{\text{blank}}(\lambda) - A_{\text{null}}(\lambda)] \}$$

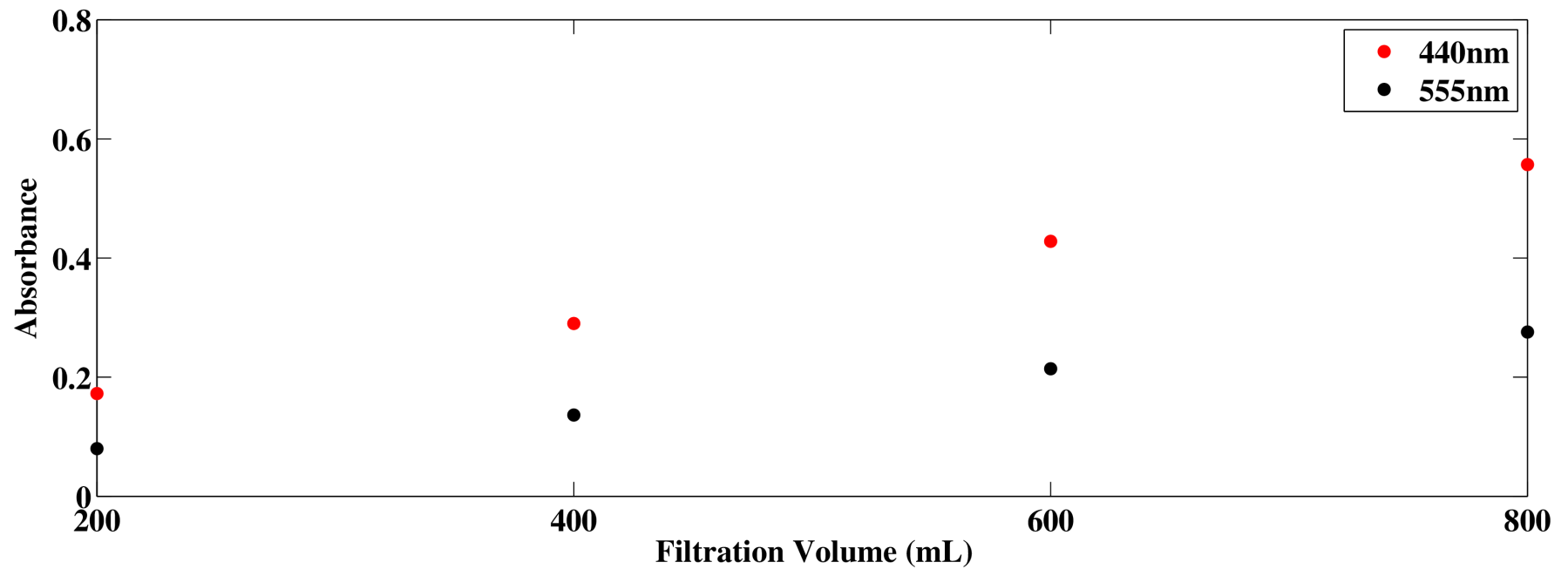
# 4. Beta formulations



# 5. Absorbance vs Volume

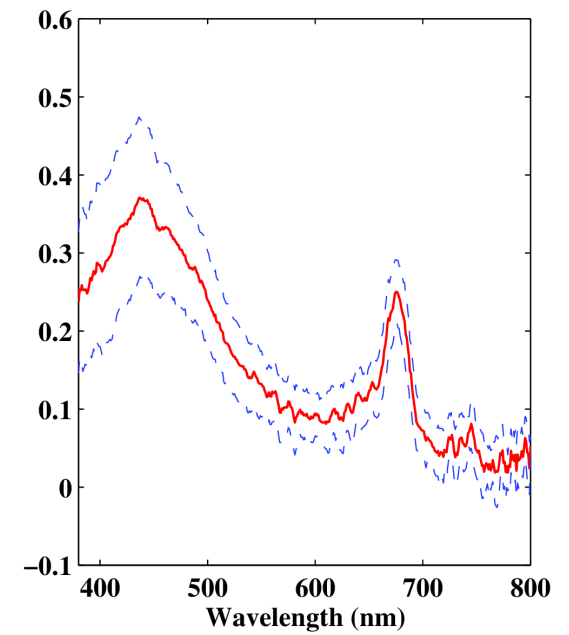
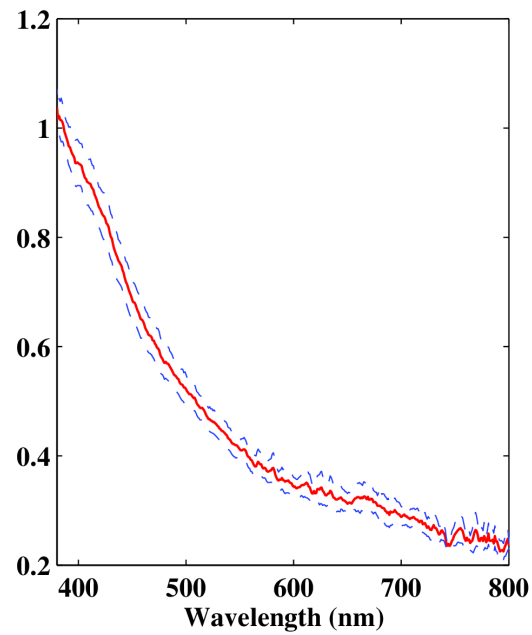
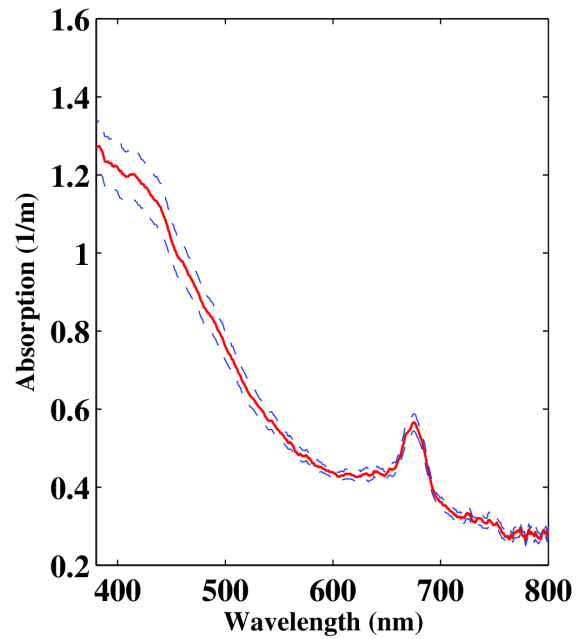


# 5. Absorbance vs Volume



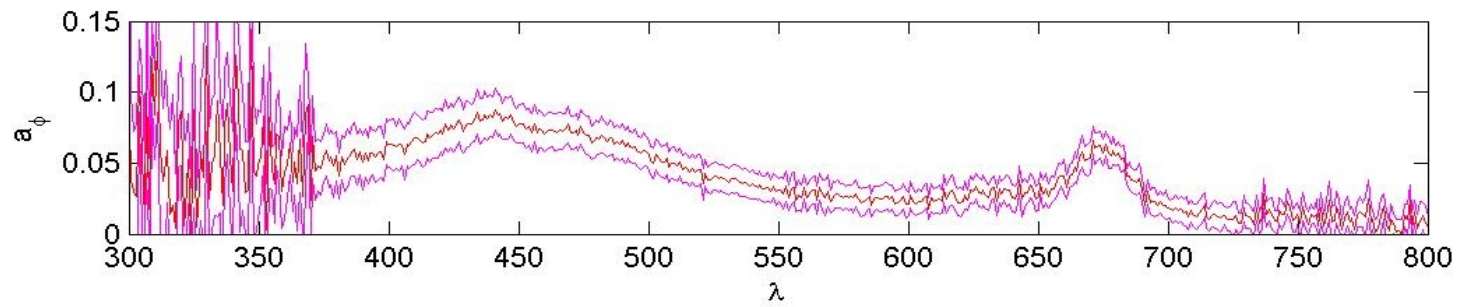
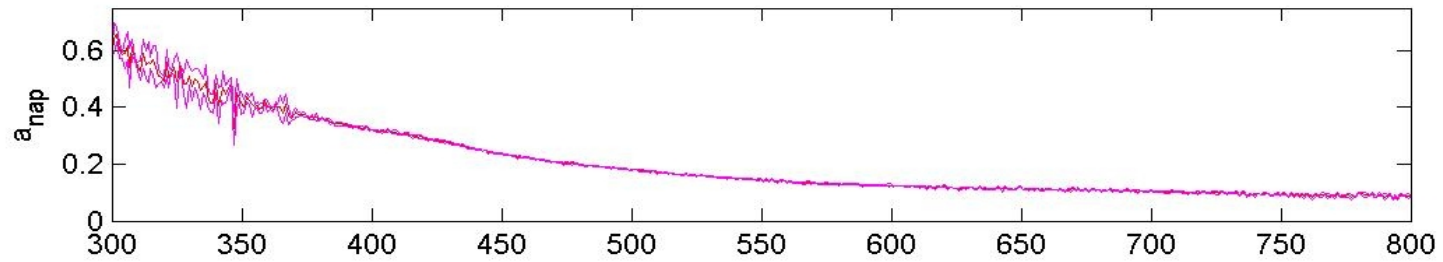
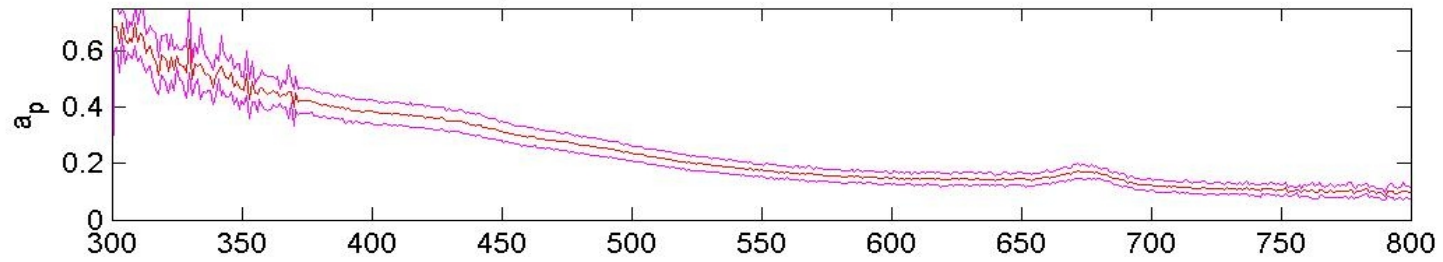


# 6.1 DRE samples



# 6.1 DRE Samples

Absorption for Damariscotta River Water



## 6.2 Spectral Slopes

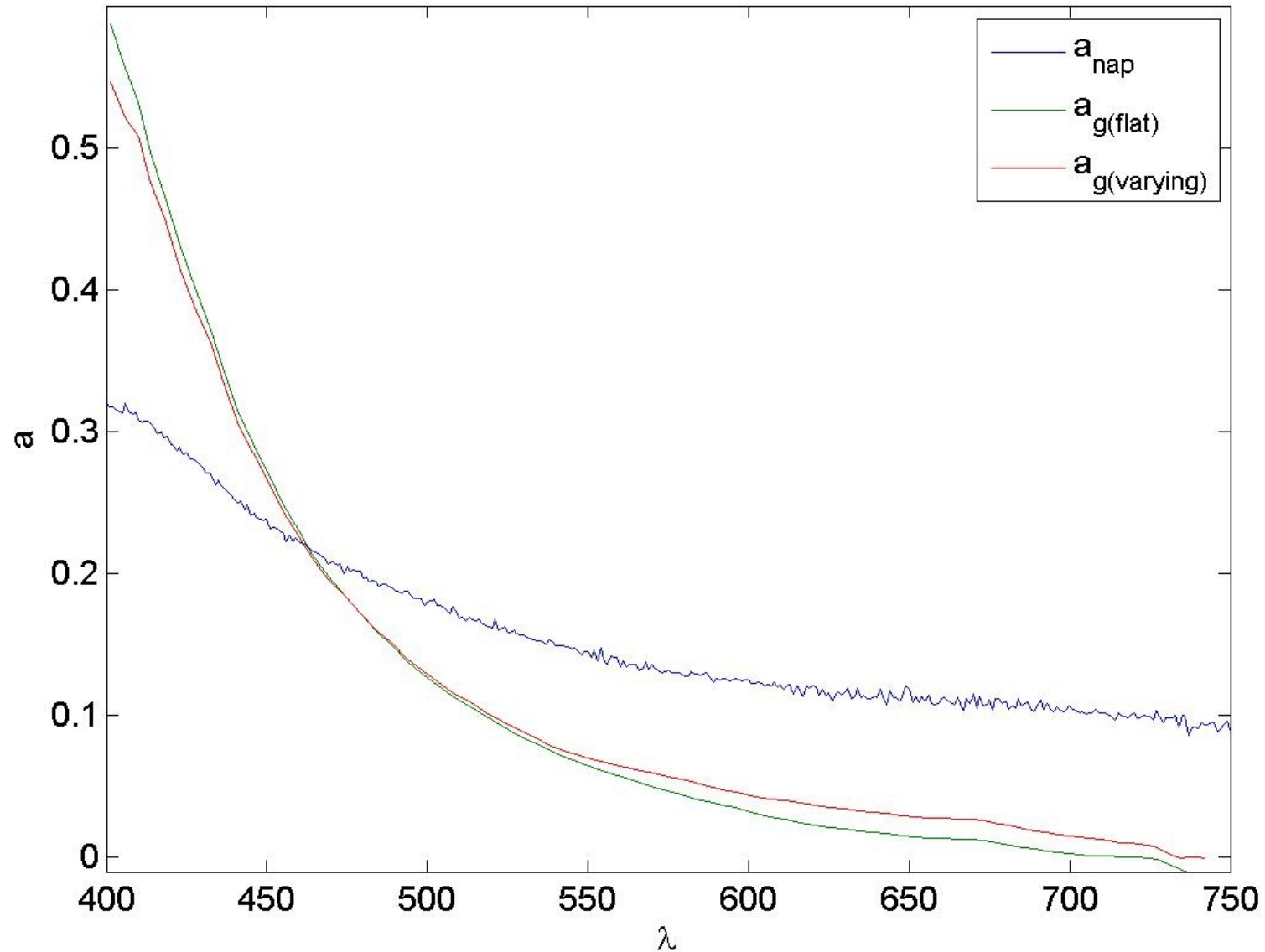
	DRE	Culture
NAP (spec)	0.0042 0.0050	0.0094
ag (acs)	0.0141 0.0155	N/A

# Lab 2 Supplement

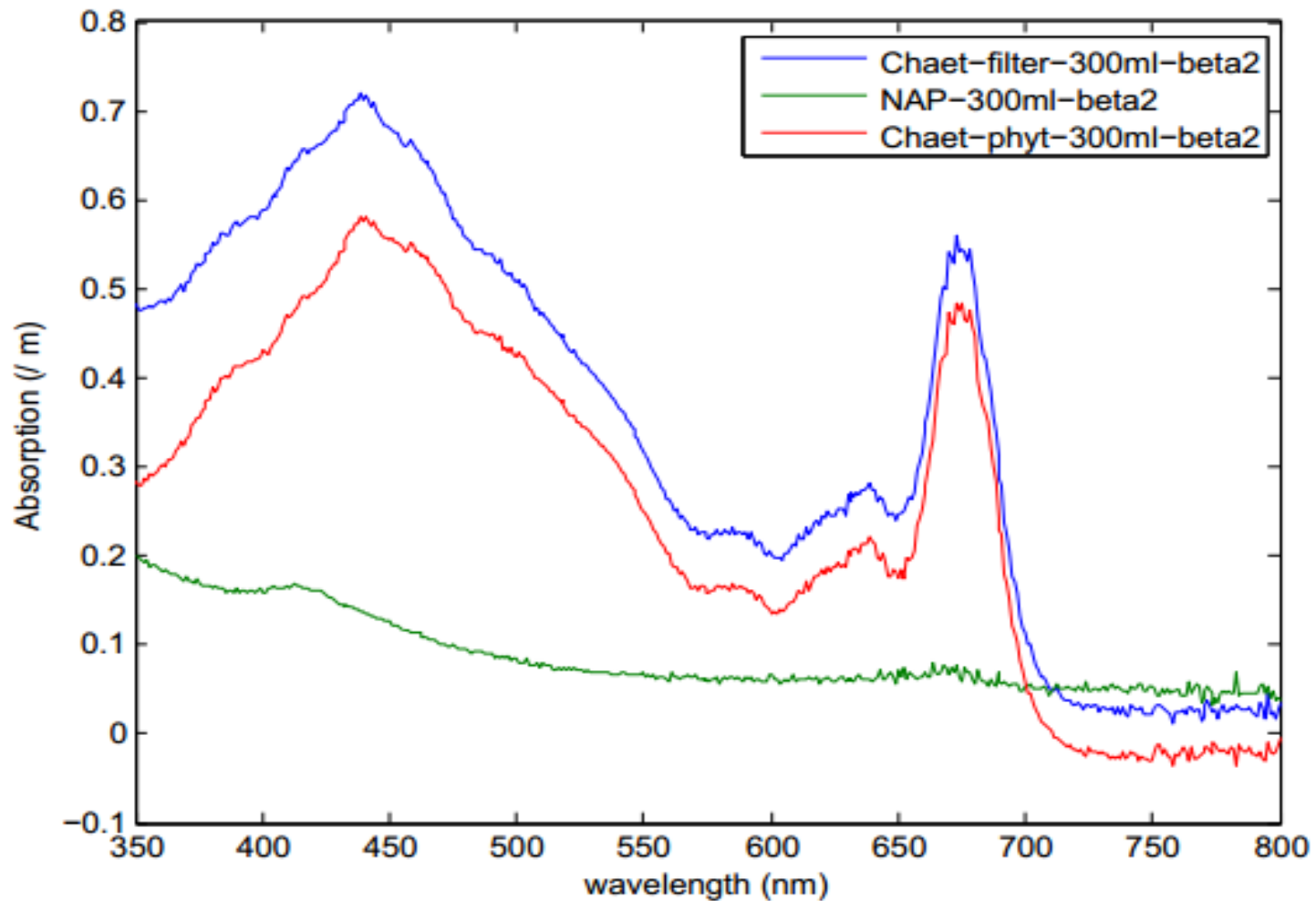
	DRE 0.7/0.2 micron	Biscay
AC-9	0.0138	N/A
AC-S (25)	N/A	0.0121
AC-S (16)	0.0131	N/A
Spec 1cm	0.006/0.005	0.0039
Spec 5cm	0.0153/0.0102	0.0120

# 6.2 Spectral Slopes

spectrophotometer  $a_{\text{nap}}$  and ac-s  $a_{\text{g}}$  for DRE water



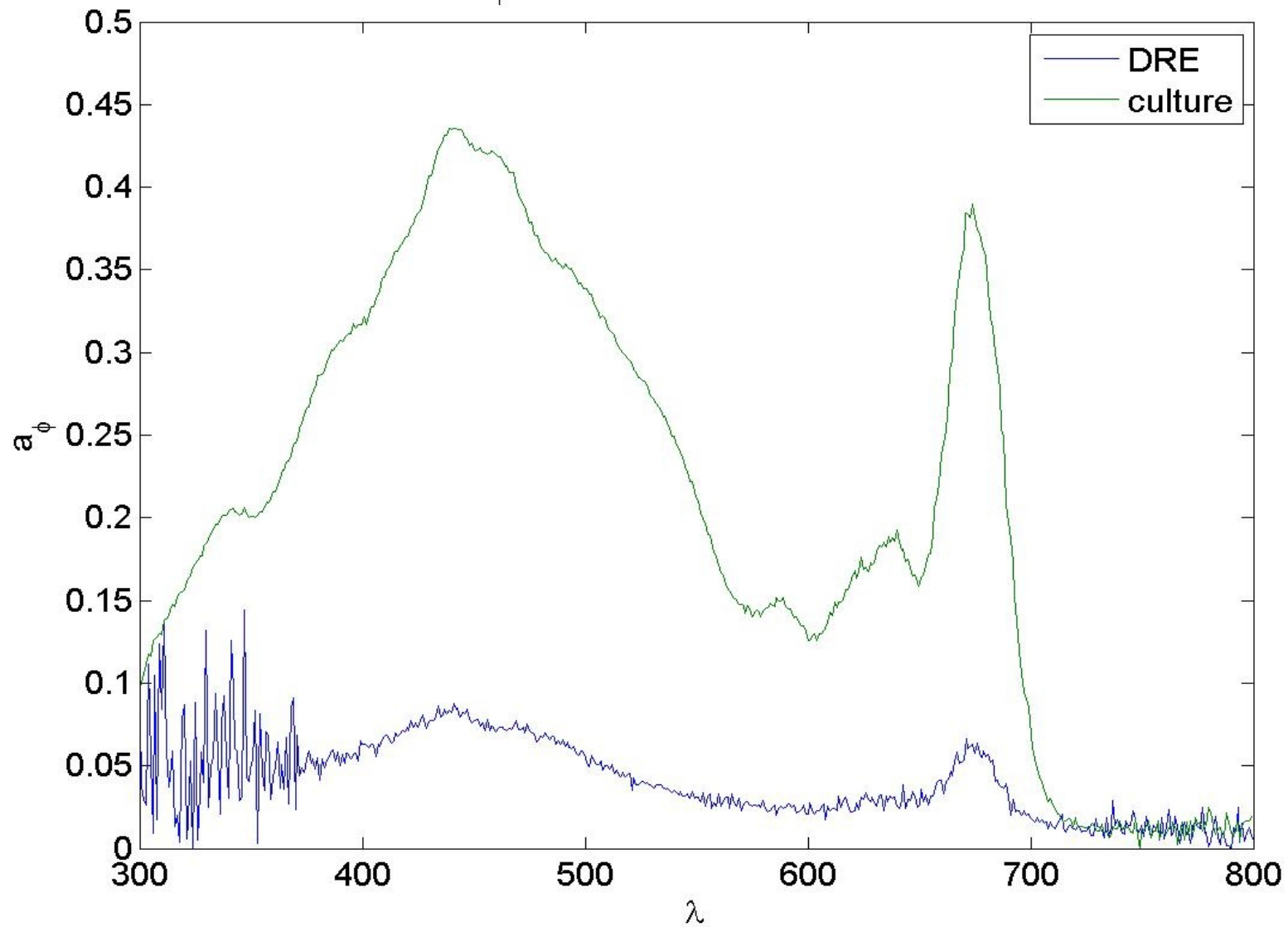
# 6.3 Cultures



# 6.3 Culture

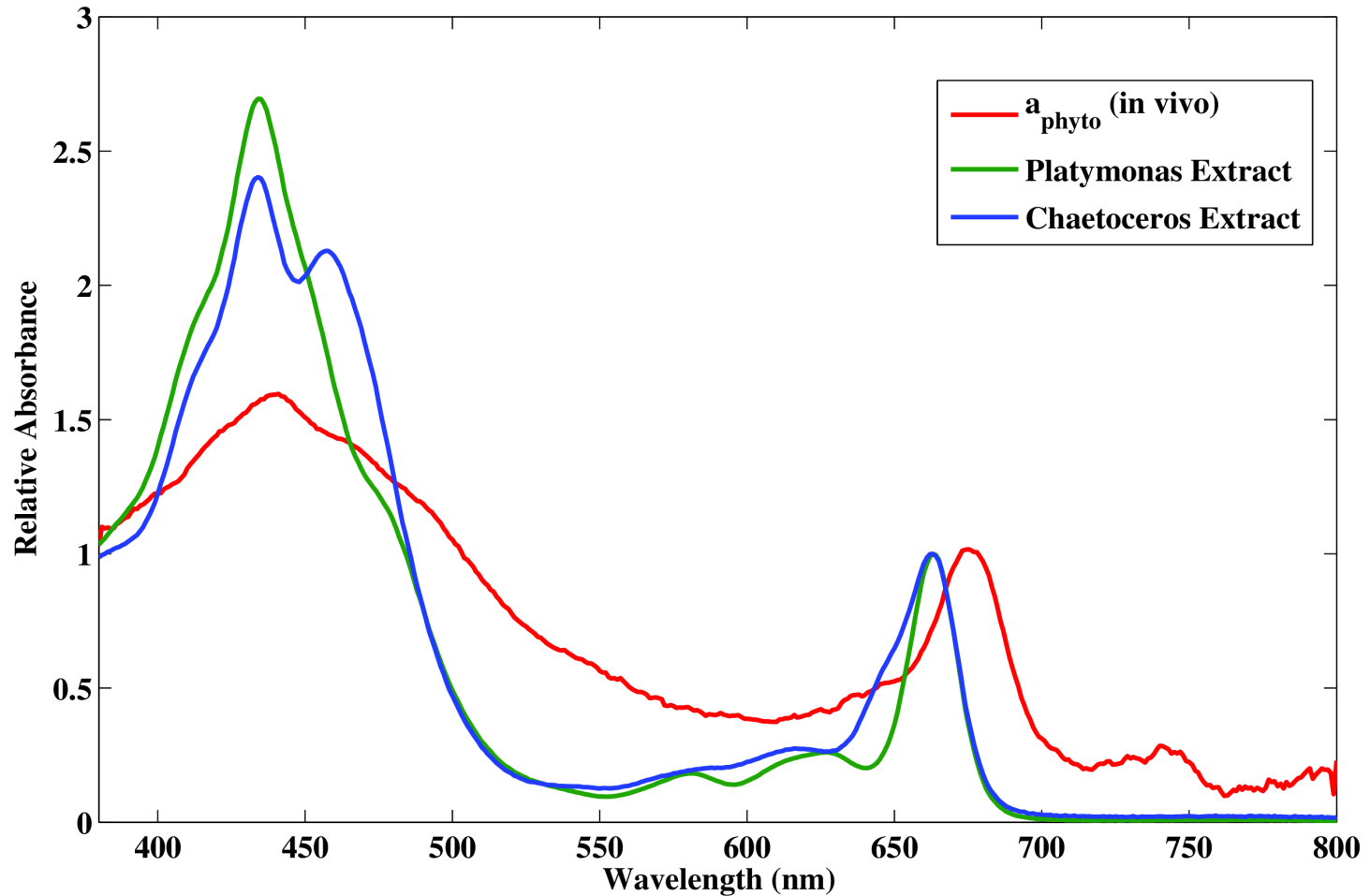
# 6.4 Culture

$a_\phi$  for DRE water and culture





# 12. Extracted comparison



- Shift when dissolved acetone.