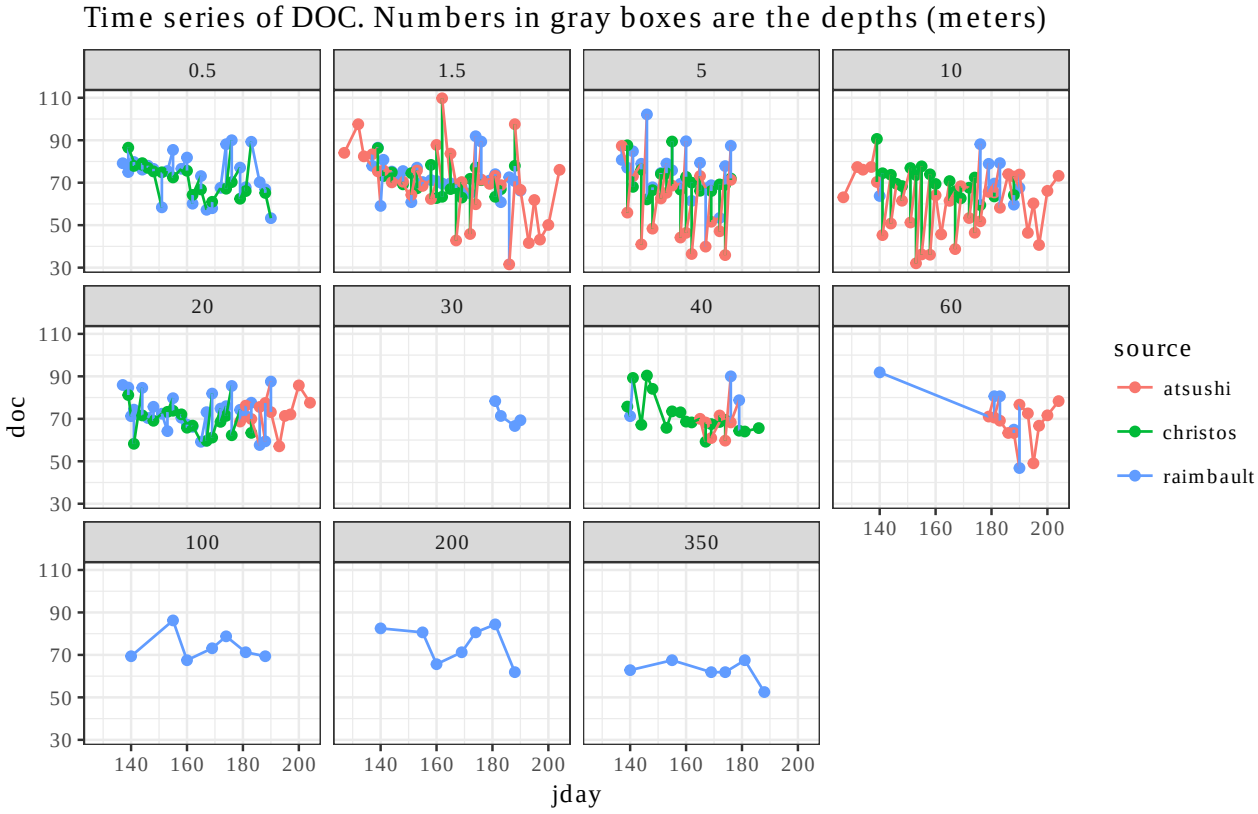
Overview of dissolved organic carbon

20 February, 2018

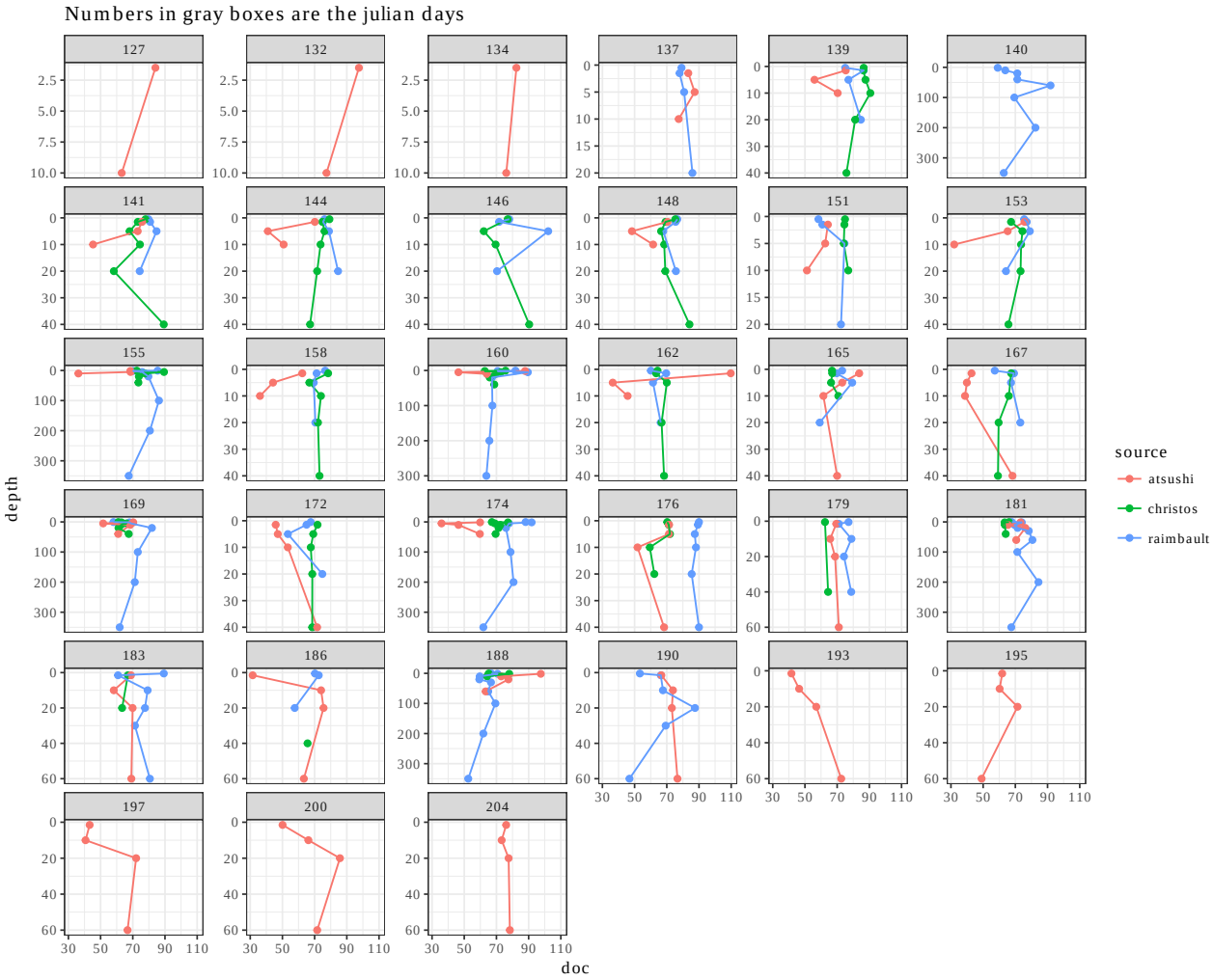
Time series

Overview of the time series from the three sources of DOC.



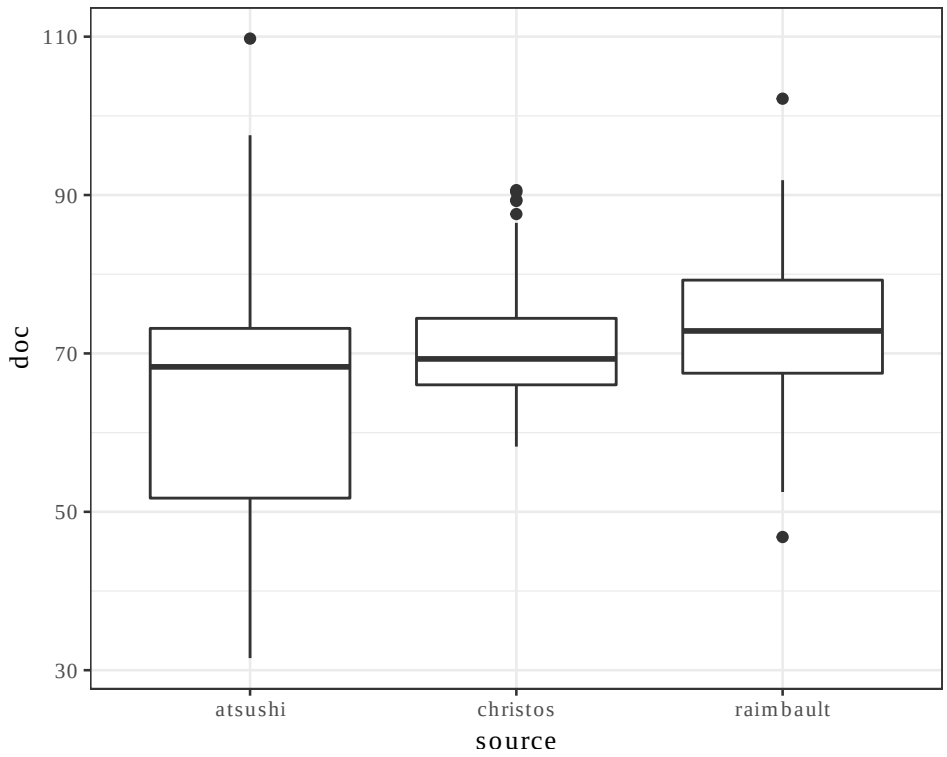
Vertical profiles

DOC vertical profiles per day.



Boxplots

The following boxplot compares the median values of the three DOC sources. Visually, is seems that Atsushi DOC values are a bit lower compared to other sources.



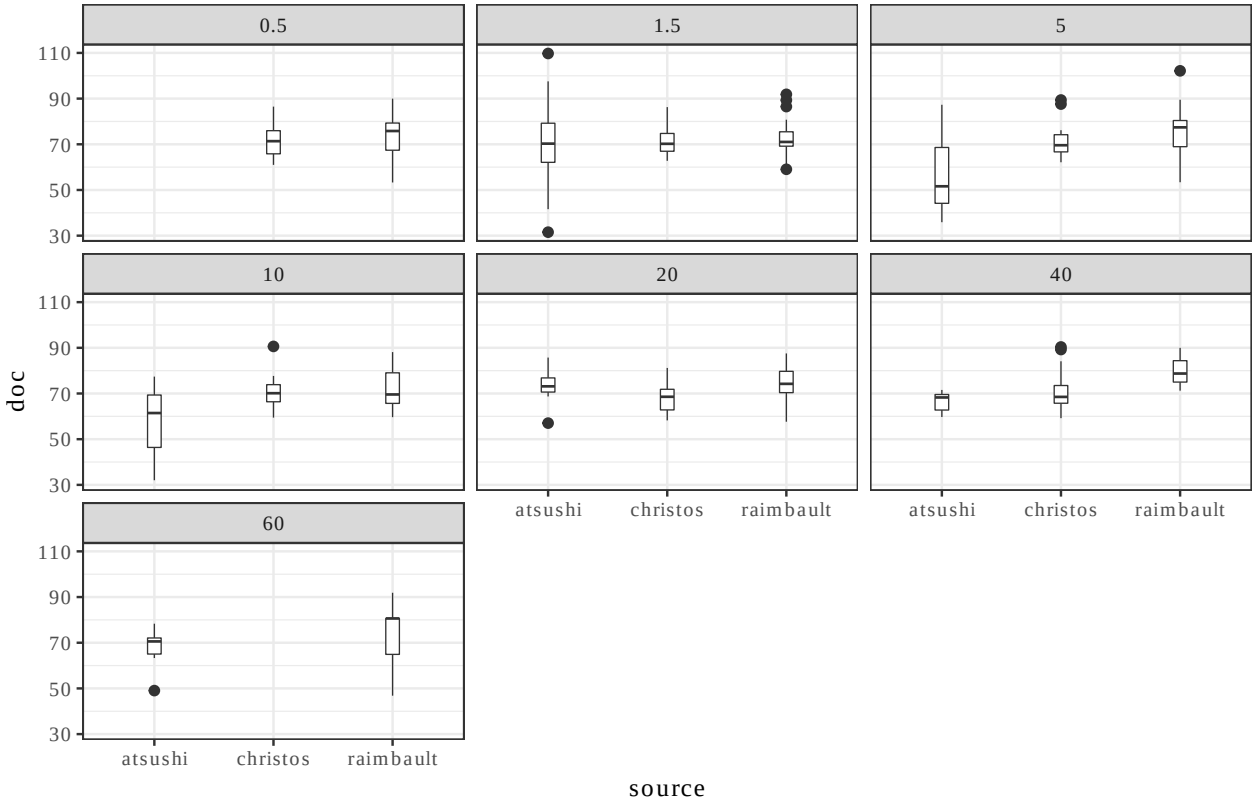
A simple ANOVA shows that there is at least one group different among the three.

term	df	sumsq	meansq	statistic	p.value
source	2	5050.384	2525.1918	20.43219	0
Residuals	336	41525.873	123.5889	NA	NA

Refining the previous ANOVA analysis, the Tukey Honest differences shows that indeed Christos and Raimbault DOC are on average 7.23 and 9.01 μ~mol higher than that of Atsushi. On other hand, there is no significant different difference between Raimvault and Christos DOC values even thought they are not correlated (see bellow).

term	comparison	estimate	conf.low	conf.high	adj.p.value
source	christos-atsushi	6.557711	2.9175835	10.197839	0.0000853
source	raimbault-atsushi	9.090796	5.6863734	12.495219	0.0000000
source	raimbault-christos	2.533085	-0.9365233	6.002693	0.1996663

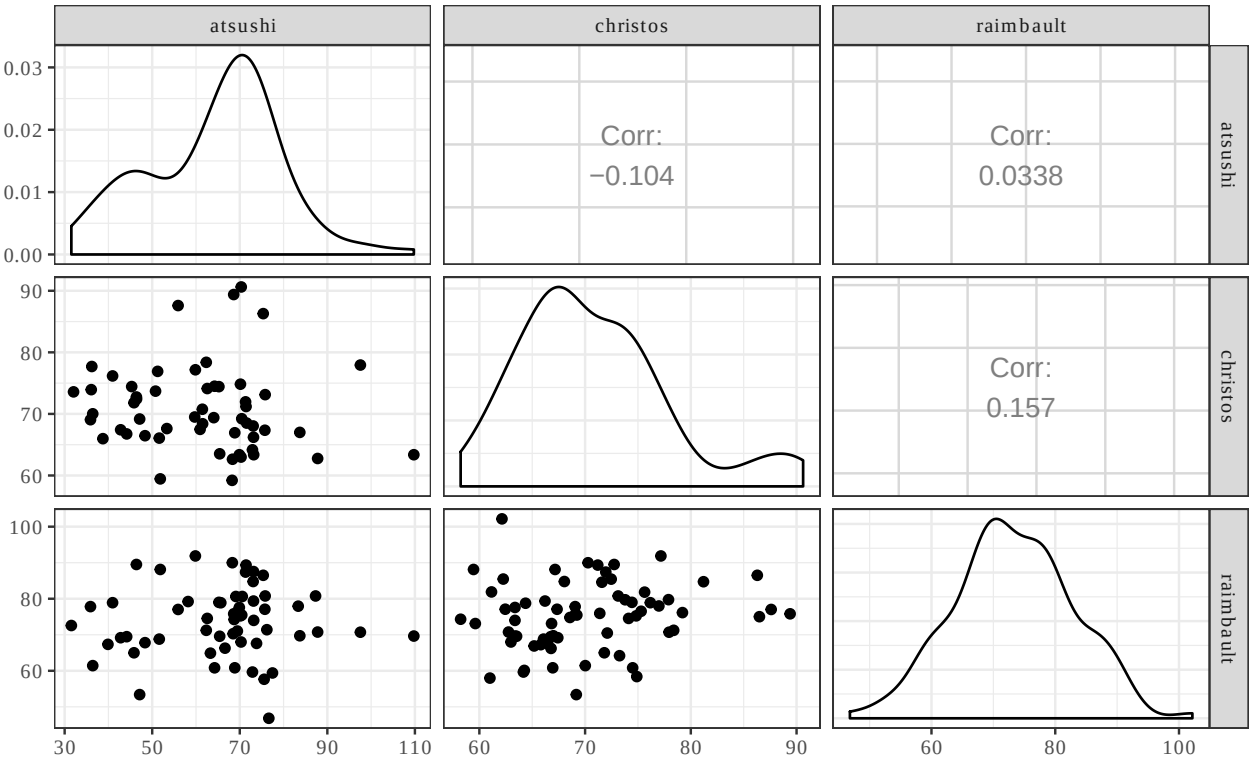
The following graphs explore the differences by depths.



Correlations

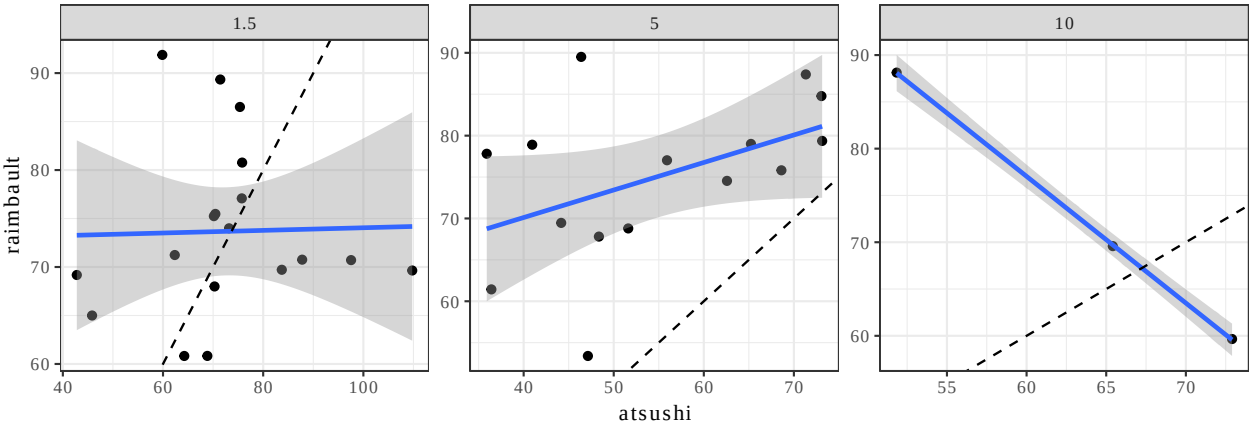
Based on the following graphs, there is not much correlation between the three DOC sources.

Correlation plots between the three DOC sources



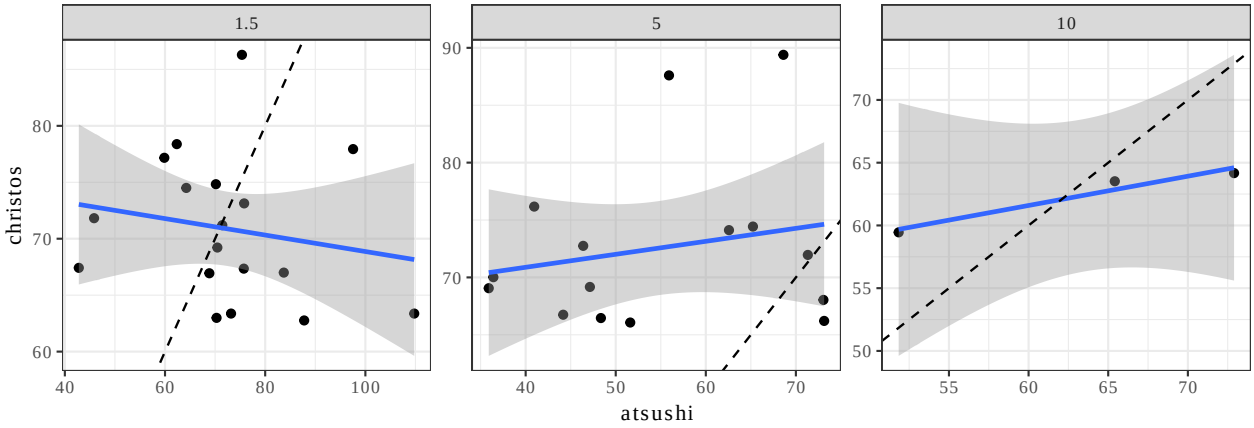
Atsushi vs Raimbault

Correlation by depth with 1:1 line (dashed). Number in top graybox is the sampling depth.



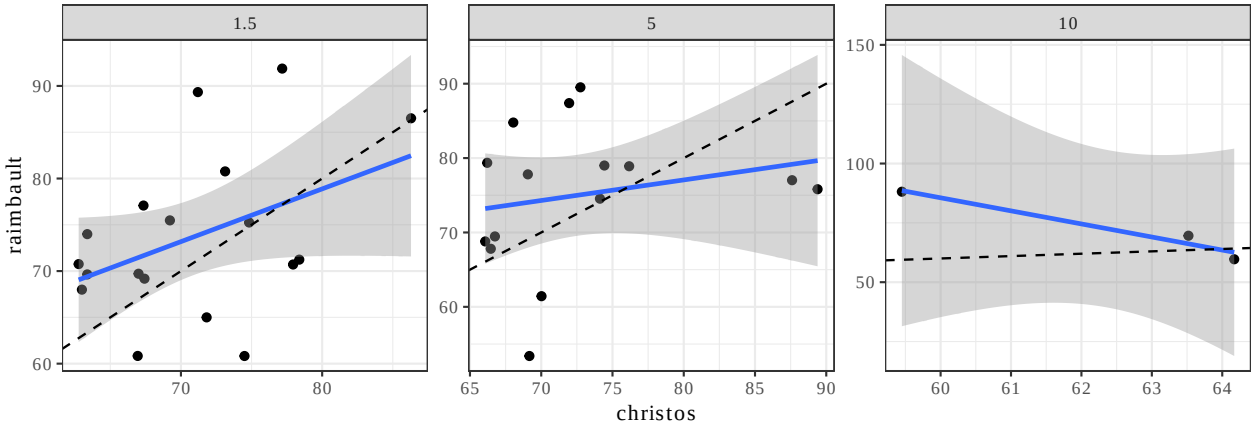
Atsushi vs Christos

Correlation by depth with 1:1 line (dashed). Number in top graybox is the sampling depth.



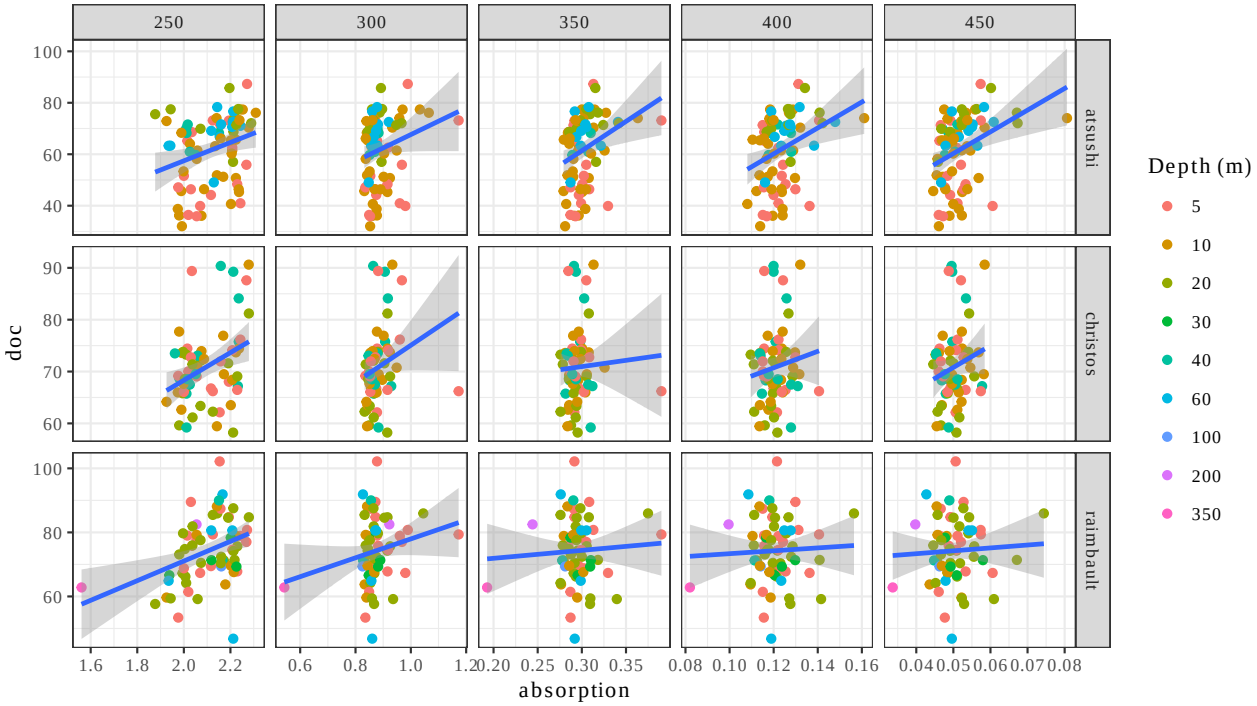
Christos vs Raimbault

Correlation by depth with 1:1 line (dashed). Number in top graybox is the sampling depth.



Correlation with CDOM data

The next graph shows the relationships between DOC and CDOM absorption (m-1) at 5 wavelengths (250, 300, 350, 400 and 450 nm). As we can see, there are no relations between DOC and aCDOM.


250
300
350
400
450
atsushi
christos
raimbault
doc
absorption
Depth (m)
5
10
20
30
40
60
100
200
350