Untitled

2024-03-25

Phytobiome

Plant

Richness and Biomass ~ Environnement

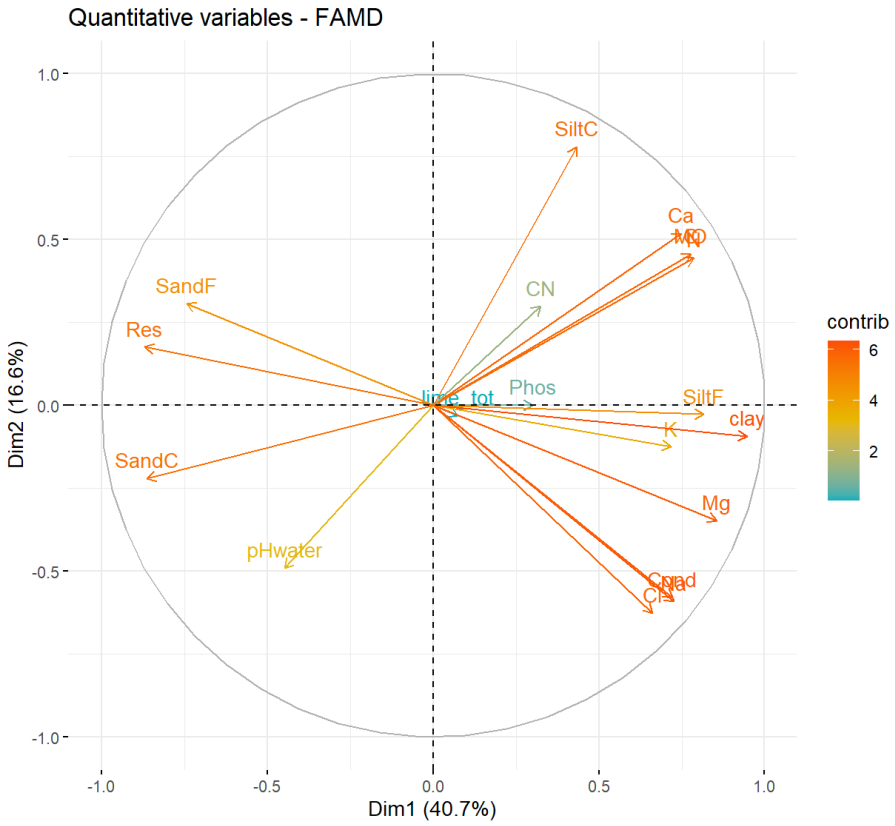

Figure 1: Famd of environmental variables (quanti)

Biomass

GLM glm(Y$Biomass ~ depth_oxy + clay + lime_tot + pHwater + MO + Cond, data = X_selected, family = Gamma(link = "log"))

step wise selection -> glm(Y$Biomass ~ ~~depth_oxy + clay +~~ lime_tot + pHwater + MO + Cond, data = X_selected, family = Gamma(link = "log"))

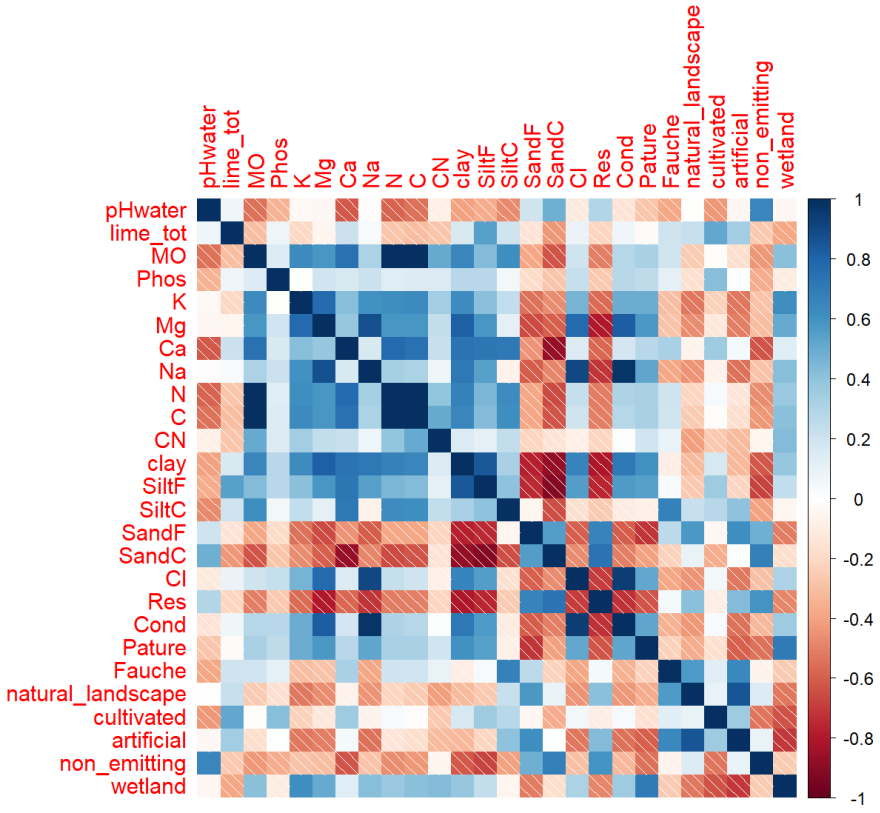

Figure 2: Correlation between all environmental variables and landscape variables

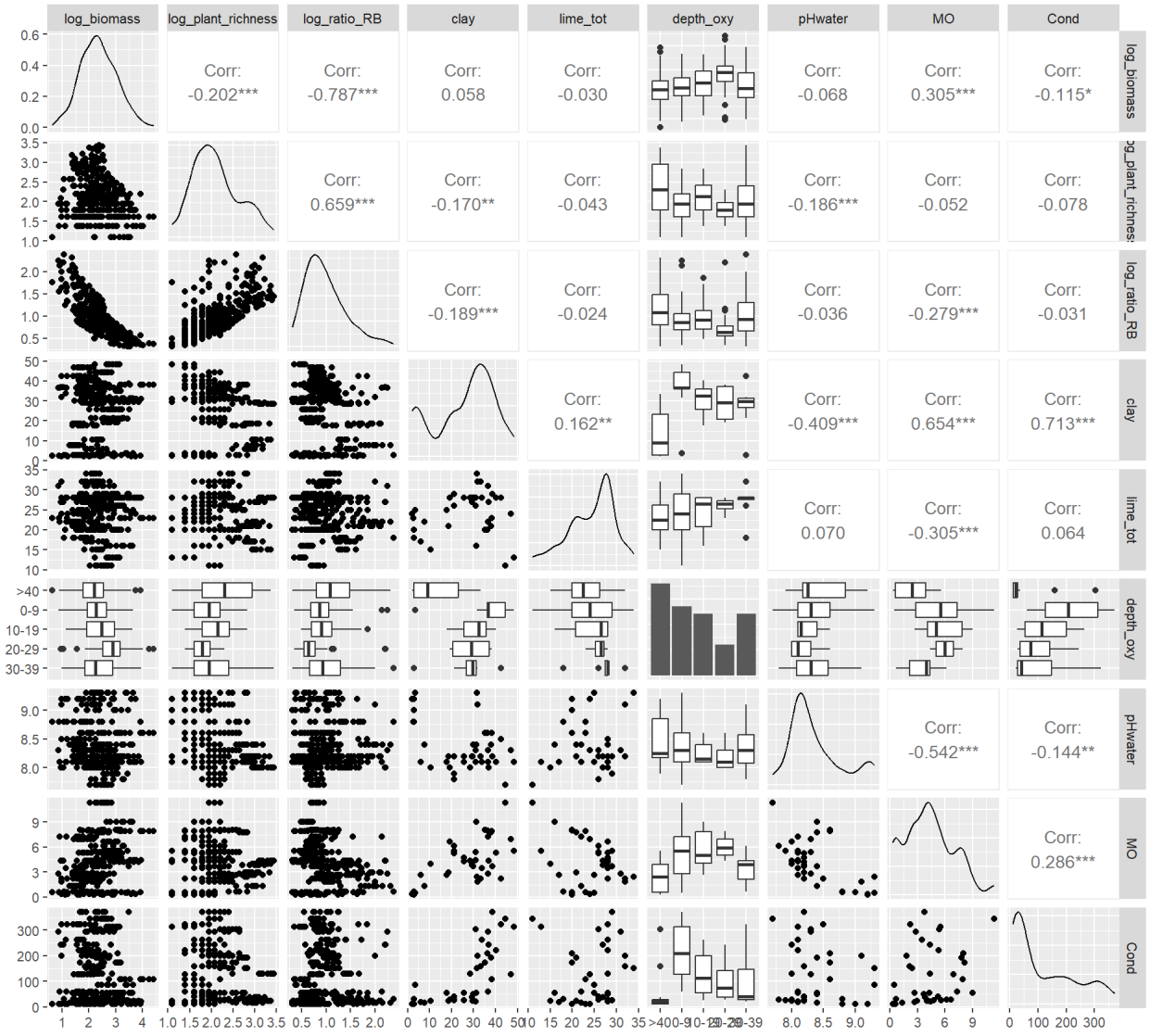

Figure 3: Correlogram of all the variables used in the following analysis

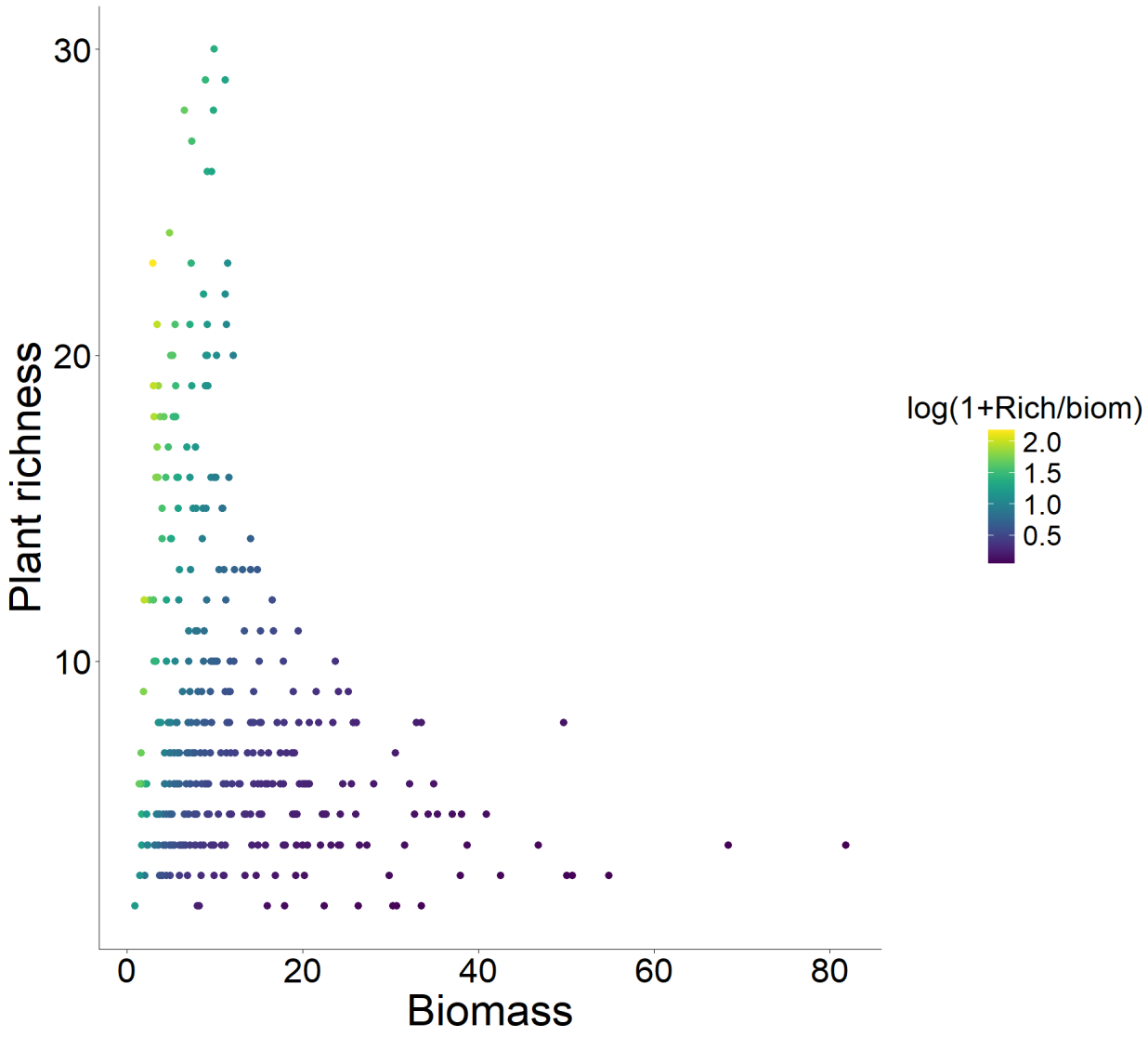

Figure 4: Relation between Biomass and richness. The color show the richness per biomass units in *ln(+1)* scale.

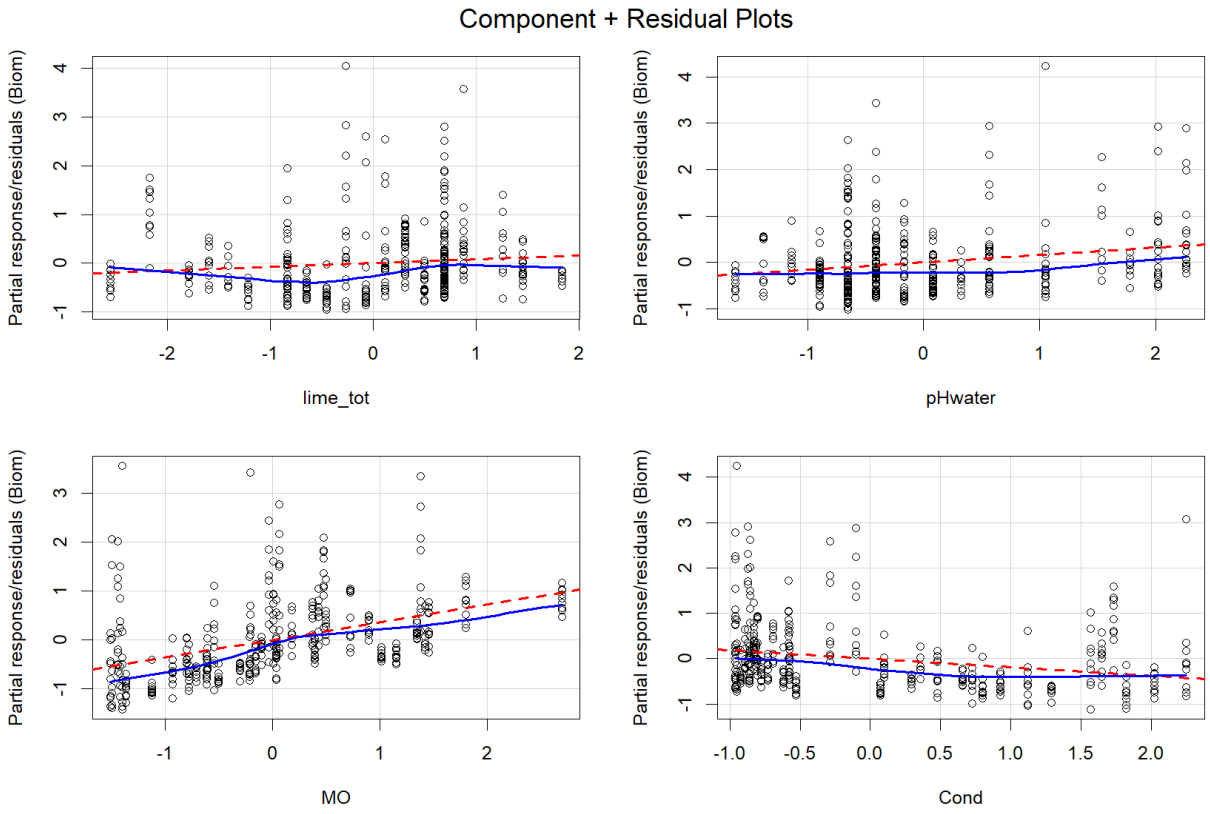

Figure 5: Partial responses and residuals on biomass for each environmental gradient, extracted form the glm presented above.

Table 1: Coefficient of the glm

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	-1.539	1.038	-1.483	0.139
lime_tot	0.015	0.008	1.842	0.066.
pHwater	0.390	0.113	3.446	0.001***
MO	0.138	0.019	7.081	0.000***
Cond	-0.002	0.000	-4.628	0.000***

GAM

	df	AIC
GLM	6.00000	2454
GAM Biomass ~ s(lime_tot) + s(clay) + depth_oxy +s(pHwater) + s(MO) + s(Cond)	38.98	2240
GAM **Biomass ~ s(lime_tot) + s(clay) + s(pHwater) + s(MO) + s(Cond)**	**39.05**	**2240**
GAM Biomass ~ s(lime_tot) + s(pHwater) + s(MO) + s(Cond)	30.15	2260

Richness

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	4.240	0.884	4.798	0.000
depth_oxy10-19	0.192	0.100	1.912	0.057
depth_oxy20-29	-0.308	0.129	-2.397	0.017
depth_oxy30-39	0.247	0.108	2.288	0.023
depth_oxy>40	0.513	0.113	4.553	0.000
clay	-0.021	0.005	-3.845	0.000
lime_tot	0.022	0.008	2.761	0.006
pHwater	-0.327	0.093	-3.526	0.000
MO	0.060	0.024	2.502	0.013
Cond	0.001	0.000	2.758	0.006

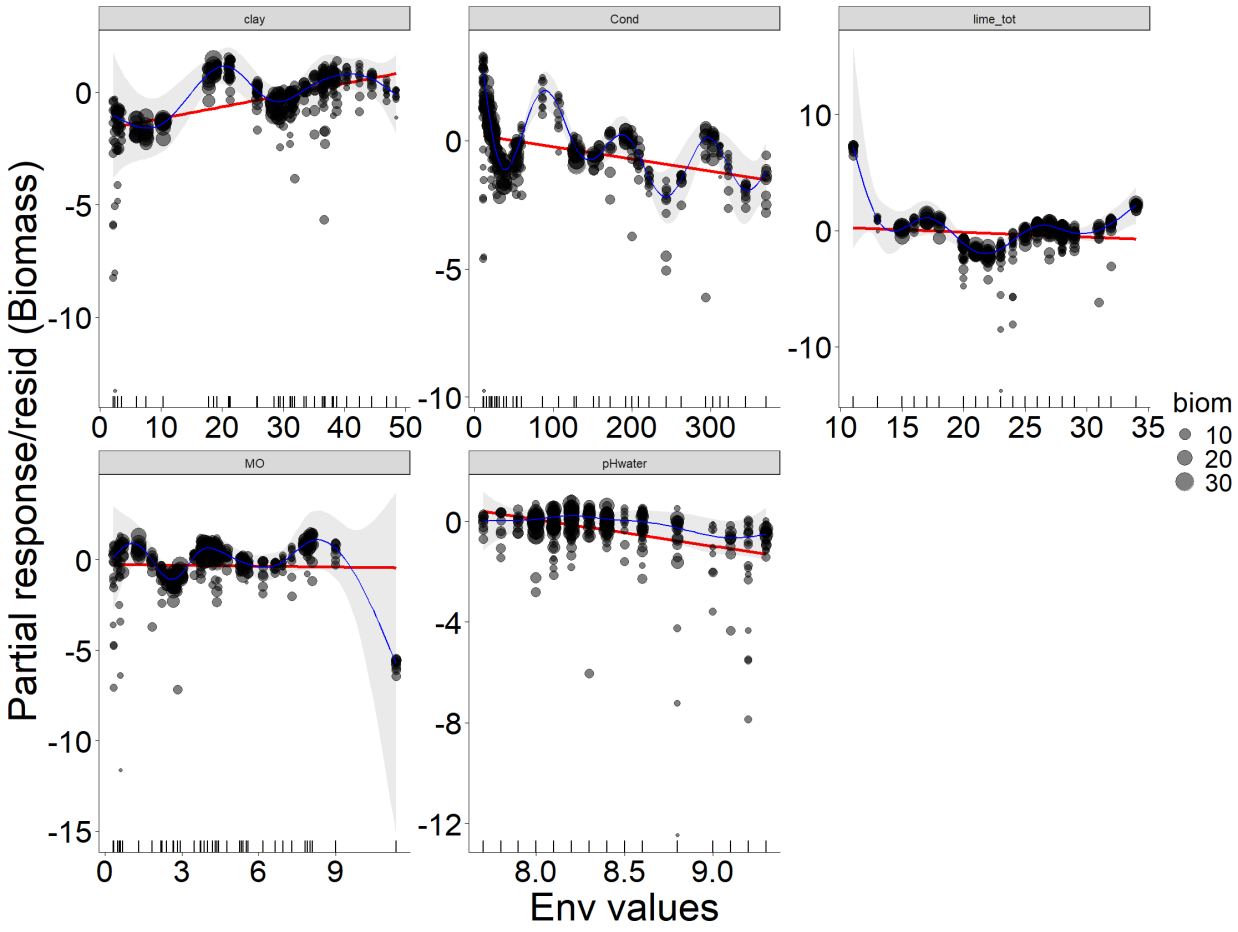

Figure 6: Partial responses and residuals on biomass for each environmental gradient, extracted form the GAM selected (bold) above.

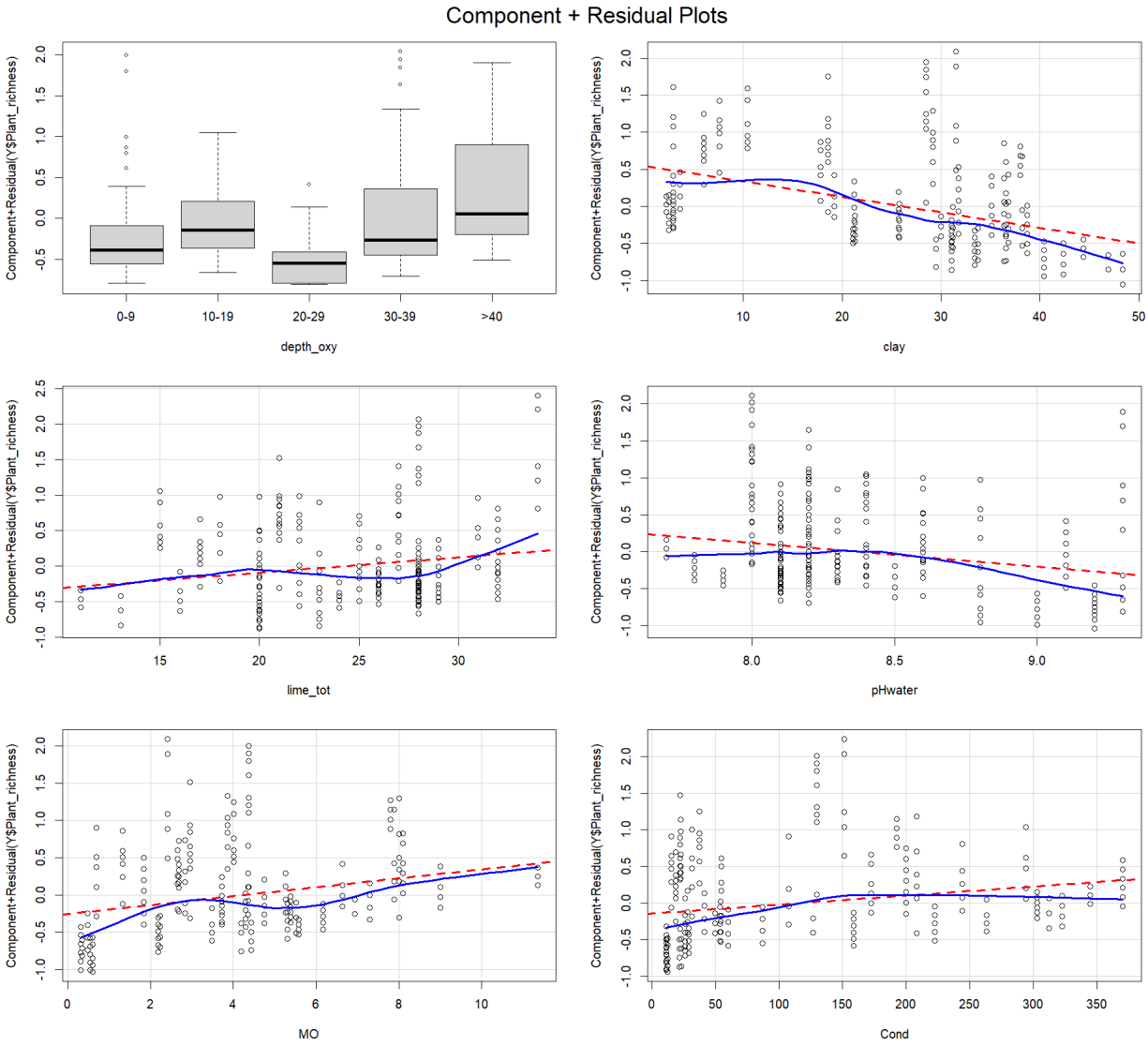

Figure 7: Partial responses and residuals on biomass for each environmental gradient, extracted form the GLM