RDA Results

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1. **All SNPs – 7 predictors**

**> # run the RDA**

**> dip.rda <- rda(dip.imp ~ ., data=pred, scale=T)**

**> dip.rda**

Call: rda(formula = dip.imp ~ lat + lon + SST\_yearly + SSS\_yearly + SST\_april + SSS\_april +

bathy, data = pred, scale = T)

Inertia Proportion Rank

Total 1.326e+04 1.000e+00

Constrained 4.924e+02 3.714e-02 7

Unconstrained 1.276e+04 9.629e-01 289

Inertia is correlations

Eigenvalues for constrained axes:

RDA1 RDA2 RDA3 RDA4 RDA5 RDA6 RDA7

214.28 50.97 47.92 46.22 45.21 44.55 43.22

Eigenvalues for unconstrained axes:

PC1 PC2 PC3 PC4 PC5 PC6 PC7 PC8

106.81 86.79 78.90 74.88 68.82 65.99 63.66 62.60

(Showing 8 of 289 unconstrained eigenvalues)

**> # calculate adjusted Rsquared**

**> RsquareAdj(dip.rda)**

$r.squared

[1] 0.03714001

$adj.r.squared

[1] 0.01381814

**> # eigenvalues constrained axes**

**> summary(eigenvals(dip.rda, model = "constrained"))**

Importance of components:

RDA1 RDA2 RDA3 RDA4 RDA5 RDA6 RDA7

Eigenvalue 214.2816 50.9684 47.91779 46.21993 45.21468 44.54634 43.21646

Proportion Explained 0.4352 0.1035 0.09732 0.09387 0.09183 0.09047 0.08777

Cumulative Proportion 0.4352 0.5387 0.63605 0.72992 0.82175 0.91223 1.00000

**> # check RDA model for significance**

**> # null-hypothesis: no linear relationship exists between SNP data and environmental predictors**

**> Sys.time()**

[1] "2019-06-21 11:29:47 CEST"

**> signif.full <- anova.cca(dip.rda, parallel=getOption("mc.cores"))** # default is permutation=999

**> Sys.time()**

[1] "2019-06-21 11:32:05 CEST"

**> signif.full**

Permutation test for rda under reduced model

Permutation: free

Number of permutations: 999

Model: rda(formula = dip.imp ~ lat + lon + SST\_yearly + SSS\_yearly + SST\_april + SSS\_april + bathy, data = pred, scale = T)

Df Variance F Pr(>F)

Model 7 492.4 1.5925 0.001 \*\*\*

Residual 289 12764.6

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Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

**> # check each constrained axis for significance**

**> # run during lunch because can take a long time**

**[ R studio keeps aborting mission, run in command line ]**

**> Sys.time()**

[1] "2019-06-21 15:36:22 CEST"

**> signif.axis <- anova.cca(dip.rda, by="axis", parallel=getOption("mc.cores"))**

**[ Erreur : vecteurs de mémoire épuisés (limite atteinte ?) ]**