Informatics-Mac-Pro:butterflies rutger.vos$ Rscript script/pgls.R -t data/supertree/Sequences/grafted.pruned.nex -d data/Tables\_EU\_traits.tsv

Loading required package: ape

Loading required package: MASS

Loading required package: mvtnorm

Warning messages:

1: package 'ape' was built under R version 3.1.2

2: package 'MASS' was built under R version 3.1.2

3: package 'mvtnorm' was built under R version 3.1.2

Warning message:

package 'optparse' was built under R version 3.1.2

Warning message:

In comparative.data(phy = tree, data = data, names.col = "species", :

Data dropped in compiling comparative data object

Call:

pgls(formula = red\_list ~ pc\_b1 + pc\_b2 + pc\_b3 + pc\_c1 + pc\_c2,

data = cdat, lambda = "ML")

Residuals:

Min 1Q Median 3Q Max

-1.8271 -0.3697 0.1047 0.4876 3.0983

Branch length transformations:

kappa [Fix] : 1.000

lambda [ ML] : 0.357

lower bound : 0.000, p = 0.0024542

upper bound : 1.000, p = < 2.22e-16

95.0% CI : (0.099, 0.608)

delta [Fix] : 1.000

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) 0.2182839 0.0780295 2.7975 0.005589 \*\*

pc\_b1 -0.1003591 0.0304468 -3.2962 0.001136 \*\*

pc\_b2 0.0067363 0.0372453 0.1809 0.856636

pc\_b3 -0.0126660 0.0255968 -0.4948 0.621195

pc\_c1 0.0458006 0.0353147 1.2969 0.195961

pc\_c2 -0.0208638 0.0340789 -0.6122 0.541000

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

Residual standard error: 0.7647 on 229 degrees of freedom

Multiple R-squared: 0.076, Adjusted R-squared: 0.05583

F-statistic: 3.767 on 5 and 229 DF, p-value: 0.002684

Call:

pgls(formula = endemicity ~ pc\_b1 + pc\_b2 + pc\_b3 + pc\_c1 + pc\_c2,

data = cdat, lambda = "ML")

Residuals:

Min 1Q Median 3Q Max

-1.47629 -0.24764 0.05303 0.29640 2.00231

Branch length transformations:

kappa [Fix] : 1.000

lambda [ ML] : 0.185

lower bound : 0.000, p = 3.4866e-05

upper bound : 1.000, p = < 2.22e-16

95.0% CI : (0.064, 0.372)

delta [Fix] : 1.000

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) 0.088358 0.040129 2.2018 0.02868 \*

pc\_b1 -0.022862 0.019608 -1.1660 0.24485

pc\_b2 0.024467 0.022608 1.0822 0.28031

pc\_b3 0.039788 0.017390 2.2880 0.02305 \*

pc\_c1 -0.108571 0.023473 -4.6254 6.267e-06 \*\*\*

pc\_c2 0.191153 0.022607 8.4556 3.331e-15 \*\*\*

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

Residual standard error: 0.4869 on 228 degrees of freedom

(1 observation deleted due to missingness)

Multiple R-squared: 0.4152, Adjusted R-squared: 0.4024

F-statistic: 32.38 on 5 and 228 DF, p-value: < 2.2e-16

Call:

pgls(formula = range\_size ~ pc\_b1 + pc\_b2 + pc\_b3 + pc\_c1 + pc\_c2,

data = cdat, lambda = "ML")

Residuals:

Min 1Q Median 3Q Max

-2754.15 -410.99 18.77 386.60 2041.22

Branch length transformations:

kappa [Fix] : 1.000

lambda [ ML] : 0.394

lower bound : 0.000, p = 0.013256

upper bound : 1.000, p = 3.3307e-16

95.0% CI : (0.058, 0.716)

delta [Fix] : 1.000

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) 381.4995 76.7709 4.9693 1.315e-06 \*\*\*

pc\_b1 177.7139 28.8669 6.1563 3.303e-09 \*\*\*

pc\_b2 -73.6477 35.6139 -2.0679 0.03977 \*

pc\_b3 -72.0229 23.9407 -3.0084 0.00292 \*\*

pc\_c1 49.8141 33.1583 1.5023 0.13440

pc\_c2 1.2605 32.0071 0.0394 0.96862

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

Residual standard error: 727.6 on 229 degrees of freedom

Multiple R-squared: 0.2137, Adjusted R-squared: 0.1966

F-statistic: 12.45 on 5 and 229 DF, p-value: 1.073e-10

Call:

pgls(formula = ssi ~ pc\_b1 + pc\_b2 + pc\_b3 + pc\_c1 + pc\_c2, data = cdat,

lambda = "ML")

Residuals:

Min 1Q Median 3Q Max

-320.24 -52.26 5.32 51.23 186.11

Branch length transformations:

kappa [Fix] : 1.000

lambda [ ML] : 0.025

lower bound : 0.000, p = 0.60102

upper bound : 1.000, p = < 2.22e-16

95.0% CI : (NA, 0.206)

delta [Fix] : 1.000

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) 50.7488 4.2809 11.8547 < 2.2e-16 \*\*\*

pc\_b1 -10.5596 3.1098 -3.3956 0.0008088 \*\*\*

pc\_b2 4.7433 3.2628 1.4537 0.1474073

pc\_b3 5.4350 3.1137 1.7455 0.0822515 .

pc\_c1 -2.4400 4.1056 -0.5943 0.5528944

pc\_c2 30.2141 3.9201 7.7075 4.028e-13 \*\*\*

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

Residual standard error: 83.34 on 226 degrees of freedom

(3 observations deleted due to missingness)

Multiple R-squared: 0.3635, Adjusted R-squared: 0.3494

F-statistic: 25.81 on 5 and 226 DF, p-value: < 2.2e-16

Call:

pgls(formula = is\_natural ~ pc\_b1 + pc\_b2 + pc\_b3 + pc\_c1 + pc\_c2,

data = cdat, lambda = "ML")

Residuals:

Min 1Q Median 3Q Max

-2.16448 -0.29737 0.09987 0.43069 2.88473

Branch length transformations:

kappa [Fix] : 1.000

lambda [ ML] : 0.540

lower bound : 0.000, p = 0.3386

upper bound : 1.000, p = 0.00033018

95.0% CI : (NA, 0.881)

delta [Fix] : 1.000

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) 0.741808 0.093679 7.9186 1.077e-13 \*\*\*

pc\_b1 -0.265636 0.030937 -8.5865 1.332e-15 \*\*\*

pc\_b2 0.047485 0.039265 1.2094 0.2278

pc\_b3 0.054467 0.024500 2.2231 0.0272 \*

pc\_c1 -0.041330 0.034644 -1.1930 0.2341

pc\_c2 -0.023696 0.033302 -0.7115 0.4775

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

Residual standard error: 0.7991 on 226 degrees of freedom

(3 observations deleted due to missingness)

Multiple R-squared: 0.2996, Adjusted R-squared: 0.2841

F-statistic: 19.34 on 5 and 226 DF, p-value: 5.17e-16