phylo_analyses

Everyone

3/22/2018

```
library(phylolm)

trait<-data.frame(mean_body_size=traits$mean_body_size,clutch_size=traits$clutch_size)
row.names(trait)<-row.names(traits)
trait<-subset(trait,trait$mean_body_size!="NaN"&trait$clutch_size!="NaN")
trait<-subset(trait,row.names(trait)%in%aus_bird_tree$tip.label)
tree_plotting<-drop.tip(aus_bird_tree,aus_bird_tree$tip.label[!aus_bird_tree$tip.label%in%row.names(t

response_variables$SCIENTIFIC_NAME<-gsub(" ","_",response_variables$SCIENTIFIC_NAME)
rv<-filter(response_variables,SCIENTIFIC_NAME%in%tree_plotting$tip.label)
exploiter<-as.array(rv$exploiter)
row.names(exploiter)<-rv$SCIENTIFIC_NAME
exploiter2<-exploiter-mean(exploiter)


tree_plotting_2<-drop.tip(tree_plotting,tree_plotting$tip.label[!tree_plotting$tip.label%in%row.names
trait<-subset(trait,row.names(trait)%in%tree_plotting_2$tip.label)
dd<-data.frame(urb=exploiter2)
dd$body_size<-trait$mean_body_size[match(row.names(dd),row.names(trait))]
dd$clutch_size<-trait$clutch_size[match(row.names(dd),row.names(trait))]
summary(phylolm(urb~log10(body_size)+clutch_size,data=dd,phy=tree_plotting_2))
```

```
##
## Call:
## phylolm(formula = urb ~ log10(body_size) + clutch_size, data = dd,
##     phy = tree_plotting_2)
##
##    AIC logLik
##   2075  -1034
##
## Raw residuals:
##     Min      1Q  Median      3Q     Max
## -10.076   2.175   3.320   4.521   8.684
##
## Mean tip height: 123.4092
## Parameter estimate(s) using ML:
## sigma2: 0.267161
##
## Coefficients:
##                   Estimate    StdErr t.value   p.value
## (Intercept)      -8.485350  2.961122 -2.8656  0.004356 **
## log10(body_size)  1.701696  0.350295  4.8579 1.637e-06 ***
## clutch_size       0.624461  0.059007 10.5829 < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
library(phylosignal)
library(phylobase)
dd$body_size<-log10(dd$body_size)
out<-phylo4d(tree_plotting_2,tip.data=dd)
phyloSignal(out)
```

```
## $stat
##                  Cmean          I          K    K.star    Lambda
## urb         0.2456731 0.03417581 0.08672169 0.1097742 0.3552770
## body_size   0.8352878 0.12286859 3.60640652 1.2864414 0.9961203
## clutch_size 0.6328941 0.11811881 0.37816393 0.2431154 0.9570027
##
## $pvalue
##             Cmean     I     K K.star Lambda
## urb         0.001 0.001 0.075  0.063  0.001
## body_size   0.001 0.001 0.001  0.001  0.001
## clutch_size 0.001 0.001 0.001  0.001  0.001
```