MARSS wiki

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Contents

Chapter 1

Contribute

Write an Rmd file. Add via a pull-request.

Each Rmd file contains one and only one entry/vignette. The title of your vignette must be at the top of your Rmd and have **#** (chapter level). Subsequent headings should be **##**.

Chapter 2

Plot states from a DFA using ggplot

author: EE Holmes date: March 15, 2018

Requires MARSS 3.10.4+

Required packages

```r
library(MARSS)
library(broom)
library(ggplot2)
```

Load data and zscore

```r
data(lakeWAplankton)
# we want lakeWAplanktonTrans, which has been log-transformed
# and the 0s replaced with NAs
plankdat = lakeWAplanktonTrans
years = plankdat[,"Year"]>=1980 & plankdat[,"Year"]<1990
phytos = c("Cryptomonas", "Diatoms", "Greens",
                "Unicells", "Other.algae")
dat.spp.1980 = plankdat[years,phytos]
# transpose data so time goes across columns
dat.spp.1980 = t(dat.spp.1980)
dat.z = zscore(dat.spp.1980)
```

Fit a DFA with 3 trends. Setting `maxit` to 50, so it runs fast.

```r
model.list = list(m=3, R="diagonal and unequal")
kemz.3 = MARSS(dat.spp.1980, model=model.list,
    z.score=TRUE, form="dfa", control=list(maxit=50))
```

Make a plot of trends with CIs

```r
theme_set(theme_bw())
d <- tidy(kemz.3, type="states")
 ggplot(data = d) +
   geom_line(aes(t, estimate)) +
   geom_ribbon(aes(x=t, ymin=conf.low, ymax=conf.high), linetype=2, alpha=0.1) +
   facet_grid(~term) +
   xlab("Time Step") + ylab("Val")
```