Running the texmex, margarita and lmr test suites

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07 May, 2024

Introduction

The texmex (Southworth, Heffernan, and Metcalfe 2017), margarita and lmr packages have testing suites that rely on the testthat package (Wickham 2011). The test suites don't currently run, apparently due to changes in testthat.

Here, we run versions of the texmex test functions that depend not on testthat, but on tinytest (van der Loo 2020).

Output appears below, followed by a summary of the R session.

The plots appear in the pdf file.

Results

texmex

```
testFiles <- paste0("R/texmex/", list.files(here::here("R/texmex")))
length(testFiles)
```

```
## [1] 52
```

```
tail(testFiles)
```

```
## [1] "R/texmex/test-rgpd.R"                "R/texmex/test-simulate.R"
## [3] "R/texmex/test-specfun.safe.product.R" "R/texmex/test-thinAndBurn.evmSim.R"
## [5] "R/texmex/test-WAIC.R"                "R/texmex/test-weibull.R"
```

So there are 52 test scripts. The whole thing fails if any tests are failed, so scroll to the bottom and see if all the scripts ran.

```
pdf("texmex_plots.pdf")
for (i in 1:length(testFiles)){
  cat(paste0("\n############## ", i, " ", testFiles[i], " ##############\n"))
  o <- run_test_file(here(testFiles[i]), verbose = FALSE)
  print(summary(o))
}
```

```
##
## ############## 1 R/texmex/test-bootmex.R ##############
##
## File            Results fails passes
##   test-bootmex.R     27     0     27
##   Total              27     0     27
```

```
## 
## ############# 2 R/texmex/test-cgpd.R #############
## 
## File           Results fails passes
##   test-cgpd.R       3    0       3
##   Total             3    0       3
## 
## ############# 3 R/texmex/test-chi.R #############
## 
## File           Results fails passes
##   test-chi.R       7    0       7
##   Total            7    0       7
## 
## ############# 4 R/texmex/test-closures.R #############
## 
## File               Results fails passes
##   test-closures.R      200    0    200
##   Total                200    0    200
## 
## ############# 5 R/texmex/test-copula.R #############
## 
## File             Results fails passes
##   test-copula.R       6    0       6
##   Total               6    0       6
## 
## ############# 6 R/texmex/test-cv.R #############
## 
## File         Results fails passes
##   test-cv.R       4    0       4
##   Total           4    0       4
## 
## ############# 7 R/texmex/test-dgpd.R #############
## 
## File           Results fails passes
##   test-dgpd.R       5    0       5
##   Total             5    0       5
## 
## ############# 8 R/texmex/test-egp3.R #############
## 
## 
## File           Results fails passes
##   test-egp3.R      48    0      48
##   Total            48    0      48
## 
## ############# 9 R/texmex/test-endPoint.R #############
## 
## File             Results fails passes
##   test-endPoint.R      30    0      30
##   Total                30    0      30
## 
## ############# 10 R/texmex/test-evm.R #############
## 
## File         Results fails passes
##   test-evm.R      87    0      87
```

```
##    Total            87     0     87
##
## ############## 11 R/texmex/test-evmBoot.R ##############
##
## File            Results fails passes
##    test-evmBoot.R      14     0     14
##    Total               14     0     14
##
## ############## 12 R/texmex/test-exprel.R ##############
##
## File            Results fails passes
##    test-exprel.R        3     0      3
##    Total                3     0      3
##
## ############## 13 R/texmex/test-extremalIndex.R ##############
##
## File                Results fails passes
##    test-extremalIndex.R      50     0     50
##    Total                     50     0     50
##
## ############## 14 R/texmex/test-glo.R ##############
##
## File         Results fails passes
##    test-glo.R      110     0     110
##    Total           110     0     110
##
## ############## 15 R/texmex/test-gpd.info.R ##############
##
## File            Results fails passes
##    test-gpd.info.R      51     0     51
##    Total                51     0     51
##
## ############## 16 R/texmex/test-gpd.prof.R ##############
##
## File            Results fails passes
##    test-gpd.prof.R       5     0      5
##    Total                 5     0      5
##
## ############## 17 R/texmex/test-gpdRangeFit.R ##############
##
## File            Results fails passes
##    test-gpdRangeFit.R       1     0      1
##    Total                    1     0      1
##
## ############## 18 R/texmex/test-gumbel.R ##############
##
## File            Results fails passes
##    test-gumbel.R        5     0      5
##    Total                5     0      5
##
## ############## 19 R/texmex/test-jointExceedanceCurve.R ##############
##
## File                    Results fails passes
```

```
##    test-jointExceedanceCurve.R       16      0      16
##    Total                             16      0      16
##
## ############## 20 R/texmex/test-log1mexp.R ##############
##
## File              Results fails passes
##    test-log1mexp.R       5      0       5
##    Total                 5      0       5
##
## ############## 21 R/texmex/test-log1prel.R ##############
##
## File              Results fails passes
##    test-log1prel.R       5      0       5
##    Total                 5      0       5
##
## ############## 22 R/texmex/test-makeReferenceMarginalDistribution.R ##############
##
## File                                      Results fails passes
##    test-makeReferenceMarginalDistribution.R      11      0      11
##    Total                                         11      0      11
##
## ############## 23 R/texmex/test-MCS.R ##############
##
## File          Results fails passes
##    test-MCS.R       4      0       4
##    Total            4      0       4
##
## ############## 24 R/texmex/test-mexDependence.R ##############
##
## File                 Results fails passes
##    test-mexDependence.R      39      0      39
##    Total                     39      0      39
##
## ############## 25 R/texmex/test-mexRangeFit.R ##############
##
## File               Results fails passes
##    test-mexRangeFit.R      9      0       9
##    Total                   9      0       9
##
## ############## 26 R/texmex/test-migpd.R ##############
##
## File           Results fails passes
##    test-migpd.R       9      0       9
##    Total              9      0       9
##
## ############## 27 R/texmex/test-migpdCoefs.R ##############
##
## File                Results fails passes
##    test-migpdCoefs.R       4      0       4
##    Total                   4      0       4
##
## ############## 28 R/texmex/test-mrl.R ##############
##
##
```

```
## File           Results fails passes
##   test-mrl.R        1      0      1
##   Total             1      0      1
##
## ############## 29 R/texmex/test-pgev.R ##############
##
## File           Results fails passes
##   test-pgev.R      88      0     88
##   Total            88      0     88
##
## ############## 30 R/texmex/test-pgpd.R ##############
##
## File           Results fails passes
##   test-pgpd.R      10      0     10
##   Total            10      0     10
##
## ############## 31 R/texmex/test-plot.bootmex.R ##############
##
## Warning in qfun(dat[, X], yex, wh, aLow, margins, constrain, v, maxit, start[, :
## Non-convergence in mexDependence
##
##
## File                 Results fails passes
##   test-plot.bootmex.R     3      0      3
##   Total                   3      0      3
##
## ############## 32 R/texmex/test-plot.chi.R ##############
##
##
## File             Results fails passes
##   test-plot.chi.R     1      0      1
##   Total               1      0      1
##
## ############## 33 R/texmex/test-plot.evmOpt.R ##############
##
##
## File               Results fails passes
##   test-plot.evmOpt.R     7      0      7
##   Total                  7      0      7
##
## ############## 34 R/texmex/test-plot.mex.R ##############
##
##
## File             Results fails passes
##   test-plot.mex.R     3      0      3
##   Total               3      0      3
##
## ############## 35 R/texmex/test-plot.migpd.R ##############
##
##
## File               Results fails passes
##   test-plot.migpd.R     1      0      1
##   Total                 1      0      1
##
## ############## 36 R/texmex/test-plot.predict.evm.R ##############
##
##
```

```
## File                     Results fails passes
##   test-plot.predict.evm.R       6    0     6
##   Total                         6    0     6
##
## ############## 37 R/texmex/test-plot.predict.mex.R ##############
##
## File                     Results fails passes
##   test-plot.predict.mex.R       2    0     2
##   Total                         2    0     2
##
## ############## 38 R/texmex/test-plotrl.evm.R ##############
##
## File               Results fails passes
##   test-plotrl.evm.R       2    0     2
##   Total                   2    0     2
##
## ############## 39 R/texmex/test-predict.evmBoot.R ##############
##
## File                     Results fails passes
##   test-predict.evmBoot.R      94    0    94
##   Total                       94    0    94
##
## ############## 40 R/texmex/test-predict.evmOpt.R ##############
##
## File                    Results fails passes
##   test-predict.evmOpt.R     103    0   103
##   Total                     103    0   103
##
## ############## 41 R/texmex/test-predict.evmSim.R ##############
##
## File                    Results fails passes
##   test-predict.evmSim.R      61    0    61
##   Total                      61    0    61
##
## ############## 42 R/texmex/test-predict.mex.R ##############
##
## File                  Results fails passes
##   test-predict.mex.R      12    0    12
##   Total                   12    0    12
##
## ############## 43 R/texmex/test-qgev.R ##############
##
## File          Results fails passes
##   test-qgev.R      57    0    57
##   Total            57    0    57
##
## ############## 44 R/texmex/test-qgpd.R ##############
##
## File          Results fails passes
##   test-qgpd.R      11    0    11
##   Total            11    0    11
##
```

```
## ############## 45 R/texmex/test-revTransform.R ##############
##
## File                    Results fails passes
##    test-revTransform.R      4    0      4
##    Total                    4    0      4
##
## ############## 46 R/texmex/test-rgev.R ##############
##
## File            Results fails passes
##    test-rgev.R      43    0      43
##    Total            43    0      43
##
## ############## 47 R/texmex/test-rgpd.R ##############
##
## File            Results fails passes
##    test-rgpd.R      30    0      30
##    Total            30    0      30
##
## ############## 48 R/texmex/test-simulate.R ##############
##
## File              Results fails passes
##    test-simulate.R      24    0      24
##    Total                24    0      24
##
## ############## 49 R/texmex/test-specfun.safe.product.R ##############
##
## File                          Results fails passes
##    test-specfun.safe.product.R      4    0      4
##    Total                            4    0      4
##
## ############## 50 R/texmex/test-thinAndBurn.evmSim.R ##############
##
## File                        Results fails passes
##    test-thinAndBurn.evmSim.R      11    0      11
##    Total                          11    0      11
##
## ############## 51 R/texmex/test-WAIC.R ##############
##
## File            Results fails passes
##    test-WAIC.R      7    0      7
##    Total            7    0      7
##
## ############## 52 R/texmex/test-weibull.R ##############
##
## File              Results fails passes
##    test-weibull.R      5    0      5
##    Total              5    0      5
dev.off()
```

```
## pdf
##   2
```

margarita

```r
testFiles <- paste0("R/margarita/", list.files(here::here("R/margarita")))
length(testFiles)
```

```
## [1] 4
```

```r
## Scroll to the bottom to see if all the test scripts ran.

pdf("margarita_plots.pdf")
for (i in 1:length(testFiles)){
  cat(paste0("\n############## ", i, " ", testFiles[i], " ##############\n"))
  o <- run_test_file(here(testFiles[i]), verbose = FALSE)
  print(summary(o))
}
```

```
##
## ############## 1 R/margarita/test-getLMrange.R ##############
##
## File                Results fails passes
##    test-getLMrange.R      45     0     45
##    Total                  45     0     45
##
## ############## 2 R/margarita/test-helpers.R ##############
##
## File             Results fails passes
##    test-helpers.R      26     0     26
##    Total               26     0     26
##
## ############## 3 R/margarita/test-plots.R ##############
##
## File      Results fails passes
##    Total        0     0      0
##
## ############## 4 R/margarita/test-simulate.R ##############
##
## File              Results fails passes
##    test-simulate.R      37     0     37
##    Total                37     0     37
```

```r
dev.off()
```

```
## pdf
##   2
```

lmr

The lmr tests don't include any figures, so we don't need to open a pdf device here.

```r
testFiles <- paste0("R/lmr/", list.files(here("R/lmr")))
length(testFiles)
```

```
## [1] 1
```

```r
for (i in 1:length(testFiles)){
  cat(paste0("\n############## ", i, " ", testFiles[i], " ##############\n"))
  o <- run_test_file(here(testFiles[i]), verbose = FALSE)
```

```
    print(summary(o))
}
```

```
##
## ############## 1 R/lmr/test-lmr.R ##############
##
## File         Results fails passes
##   test-lmr.R     140     0    140
##   Total          140     0    140
```

Appendix

Information on the R session

Information on the R session, in the interests of reproducibility. **R version 4.3.3 (2024-02-29)**

Platform: x86_64-pc-linux-gnu (64-bit)

locale: *LC_CTYPE=en_GB.UTF-8, LC_NUMERIC=C, LC_TIME=en_GB.UTF-8, LC_COLLATE=en_GB.UTF-8, LC_MONETARY=en_GB.UTF-8, LC_MESSAGES=en_GB.UTF-8, LC_PAPER=en_GB.UTF-8, LC_NAME=C, LC_ADDRESS=C, LC_TELEPHONE=C, LC_MEASUREMENT=en_GB.UTF-8* and *LC_IDENTIFICATION=C*

attached base packages: *stats*, *graphics*, *grDevices*, *utils*, *datasets*, *methods* and *base*

other attached packages: *robust(v.0.7-4)*, *fit.models(v.0.64)*, *robustbase(v.0.99-1)*, *survival(v.3.5-8)*, *ismev(v.1.42)*, *mgcv(v.1.9-1)*, *nlme(v.3.1-163)*, *MASS(v.7.3-60.0.1)*, *tinytest(v.1.4.1)*, *lmr(v.0.2)*, *margarita(v.0.25)*, *formattable(v.0.2.1)*, *scales(v.1.3.0)*, *xtable(v.1.8-4)*, *gridExtra(v.2.3)*, *texmex(v.2.4.9)*, *mvtnorm(v.1.2-3)*, *lubridate(v.1.9.3)*, *forcats(v.1.0.0)*, *stringr(v.1.5.0)*, *dplyr(v.1.1.4)*, *purrr(v.1.0.2)*, *readr(v.2.1.4)*, *tidyr(v.1.3.0)*, *tibble(v.3.2.1)*, *ggplot2(v.3.5.0)* and *tidyverse(v.2.0.0)*

loaded via a namespace (and not attached): *gtable(v.0.3.4)*, *xfun(v.0.41)*, *bslib(v.0.5.1)*, *htmlwidgets(v.1.6.2)*, *lattice(v.0.22-5)*, *tzdb(v.0.4.0)*, *vctrs(v.0.6.5)*, *tools(v.4.3.3)*, *generics(v.0.1.3)*, *stats4(v.4.3.3)*, *parallel(v.4.3.3)*, *RobStatTM(v.1.0.8)*, *fansi(v.1.0.6)*, *DEoptimR(v.1.1-3)*, *pkgconfig(v.2.0.3)*, *Matrix(v.1.6-5)*, *pyinit(v.1.1.3)*, *lifecycle(v.1.0.4)*, *farver(v.2.1.1)*, *compiler(v.4.3.3)*, *munsell(v.0.5.0)*, *htmltools(v.0.5.7)*, *sass(v.0.4.7)*, *yaml(v.2.3.7)*, *rrcov(v.1.7-4)*, *pillar(v.1.9.0)*, *jquerylib(v.0.1.4)*, *cachem(v.1.0.8)*, *tidyselect(v.1.2.1)*, *digest(v.0.6.33)*, *stringi(v.1.7.12)*, *pander(v.0.6.5)*, *labeling(v.0.4.3)*, *splines(v.4.3.3)*, *pcaPP(v.2.0-3)*, *rprojroot(v.2.0.4)*, *fastmap(v.1.1.1)*, *grid(v.4.3.3)*, *here(v.1.0.1)*, *colorspace(v.2.1-0)*, *cli(v.3.6.2)*, *magrittr(v.2.0.3)*, *utf8(v.1.2.4)*, *withr(v.3.0.0)*, *timechange(v.0.2.0)*, *rmarkdown(v.2.25)*, *hms(v.1.1.3)*, *evaluate(v.0.23)*, *knitr(v.1.45)*, *rlang(v.1.1.3)*, *Rcpp(v.1.0.11)*, *glue(v.1.7.0)*, *render(v.0.4.5)*, *rstudioapi(v.0.15.0)*, *jsonlite(v.1.8.8)* and *R6(v.2.5.1)*

References

Southworth, H., J. E. Heffernan, and P. D. Metcalfe. 2017. *Texmex: Statistical Modelling of Extreme Values.*

van der Loo, MPJ. 2020. "A Method for Deriving Information from Running r Code." *The R Journal*, Accepted for publication. https://arxiv.org/abs/2002.07472.

Wickham, Hadley. 2011. "Testthat: Get Started with Testing." *The R Journal* 3: 5–10. http://journal.r-project.org/archive/2011-1/RJournal_2011-1_Wickham.pdf.