

# Running the texmex, margarita and lmr test suites

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## 1 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.

## 2 Results

### 2.1 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"      "R/texmex/test-spe
## [4] "R/texmex/test-thinAndBurn.evmSim.R"  "R/texmex/test-WAIC.R"         "R/texmex/test-weil
```

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-loglmexp.R #####
##
## File           Results fails passes
## test-loglmexp.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
##
## 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
```

## 2.2 margarita

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

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

```
# 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
```

```
dev.off()
```

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



## 2.3 lmr

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

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

## [1] 1

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
```

## 3 Appendix

### 3.1 Information on the R session

Information on the R session, in the interests of reproducibility. **R version 4.2.0 (2022-04-22)**

**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.0.7-0), fit.models(v.0.64), robustbase(v.0.95-0), survival(v.3.2-13), ismev(v.1.42), mgcv(v.1.8-40), nlme(v.3.1-157), MASS(v.7.3-57), tinytest(v.1.3.1), lmr(v.0.1), margarita(v.0.25), formattable(v.0.2.1), scales(v.1.2.0), xtable(v.1.8-4), gridExtra(v.2.3), texmex(v.2.4.8), mvtnorm(v.1.1-3), render(v.0.4.5), flextable(v.0.7.0), here(v.1.0.1), forcats(v.0.5.1), stringr(v.1.4.0), dplyr(v.1.0.9), purrr(v.0.3.4), readr(v.2.1.2), tidyr(v.1.2.0), tibble(v.3.1.7), ggplot2(v.3.3.6), tidyverse(v.1.3.1), kableExtra(v.1.3.4) and rmarkdown(v.2.14)

**loaded via a namespace (and not attached):** fs(v.1.5.2), lubridate(v.1.8.0), bit64(v.4.0.5), webshot(v.0.5.3), httr(v.1.4.2), rprojroot(v.2.0.3), RobStatTM(v.1.0.5), tools(v.4.2.0), backports(v.1.4.1), utf8(v.1.2.2), R6(v.2.5.1), DBI(v.1.1.2), colorspace(v.2.0-3), withr(v.2.5.0), tidyselect(v.1.1.2), bit(v.4.0.4), compiler(v.4.2.0), cli(v.3.3.0), rvest(v.1.0.2), xml2(v.1.3.3), officer(v.0.4.2), labeling(v.0.4.2), DEoptimR(v.1.0-11), systemfonts(v.1.0.4), digest(v.0.6.29), svglite(v.2.1.0), rrcov(v.1.7-0), base64enc(v.0.1-3), pkgconfig(v.2.0.3), htmltools(v.0.5.2), dbplyr(v.2.1.1), fastmap(v.1.1.0), htmlwidgets(v.1.5.4), rlang(v.1.0.2), readxl(v.1.4.0), rstudioapi(v.0.13), farver(v.2.1.0), generics(v.0.1.2), jsonlite(v.1.8.0), vroom(v.1.5.7), zip(v.2.2.0), magrittr(v.2.0.3), Matrix(v.1.4-1), Rcpp(v.1.0.8.3), munsell(v.0.5.0), fansi(v.1.0.3), gdtools(v.0.2.4), lifecycle(v.1.0.1), stringi(v.1.7.6), yaml(v.2.3.5), grid(v.4.2.0), parallel(v.4.2.0), crayon(v.1.5.1), lattice(v.0.20-45), splines(v.4.2.0), haven(v.2.5.0), pander(v.0.6.5), hms(v.1.1.1), pyinit(v.1.1.3), knitr(v.1.39), pillar(v.1.7.0), uuid(v.1.1-0), stats4(v.4.2.0), reprex(v.2.0.1), glue(v.1.6.2), evaluate(v.0.15), data.table(v.1.14.2), modelr(v.0.1.8), vctrs(v.0.4.1), tzdb(v.0.3.0), cellranger(v.1.1.0), gtable(v.0.3.0), assertthat(v.0.2.1), xfun(v.0.30), broom(v.0.8.0), pcaPP(v.2.0-1), viridisLite(v.0.4.0), tinytex(v.0.38) and ellipsis(v.0.3.2)

## References

- Southworth, H., J. E. Heffernan, and P. D. Metcalfe. 2017. *Texmer: 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](http://journal.r-project.org/archive/2011-1/RJournal_2011-1_Wickham.pdf).