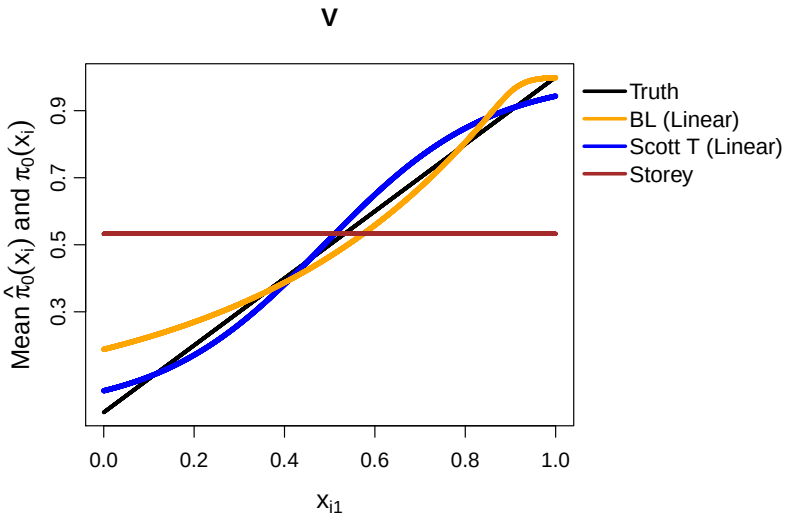
```
## Load libraries
library(splines)
library(MASS)
library(qvalue)

##source functions
source("../functions.R")
```

1 Normally-distributed test statistics

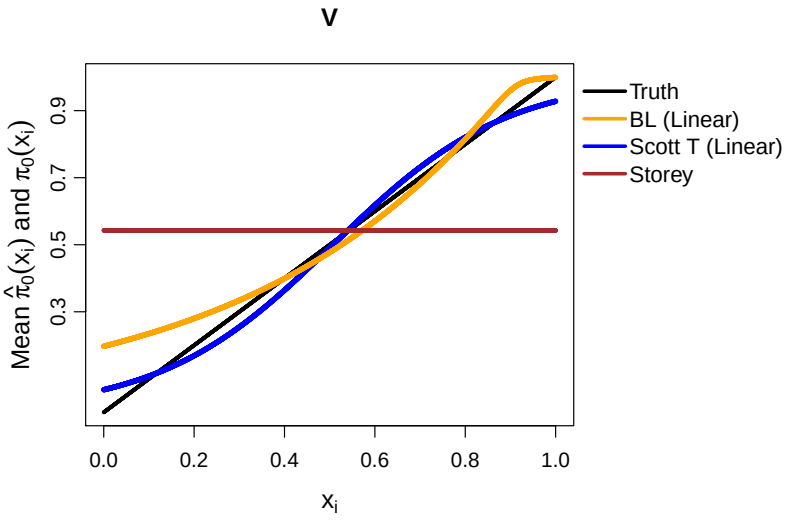
```
alts <- c("alt_z_large","alt_t_large")

alt <- alts[1]

print("V")

## [1] "V"

load(paste(alt,"simResults_5.RData",sep="/"))
load(paste(alt,"simResults_pi0x_thresh_5.RData",sep="/"))
load(paste(alt,"simResults_pi0x_Scott_emp_5.RData",sep="/"))
load(paste(alt,"simResults_pi0x_Scott_5.RData",sep="/"))

pi0StoreyMean <- mean(apply(pValuesSims, 1, function(p){qvalue(p)$pi0}))

plotMeanPi0(pi0, pi0MeansVars, pi0hatScottMean, pi0StoreyMean, pi0StoreyMean, tme=tme, main=
            ylim=c(0,1))
legend("topright", inset=c(-0.45,0),##x=-0.2, y=0.45,##"bottomright", ##x=-100, y=0.3,
       legend=c("Truth",
                "BL (Linear)",
                "Scott T (Linear)",
                "Storey"),
       col=c("black",
             "orange",
             "blue",
             "brown"),
       bty="n",
       lwd=c(3,3,3,3), lty=c(1,1,1,1),
       cex=1.2, x.intersp=0.2, y.intersp=1.0)
```



2 T-distributed test statistics

```
alt <- alts[2]

print("V")

## [1] "V"

load(paste(alt,"simResults_5.RData",sep="/"))
load(paste(alt,"simResults_pi0x_thresh_5.RData",sep="/"))
load(paste(alt,"simResults_pi0x_Scott_emp_5.RData",sep="/"))
load(paste(alt,"simResults_pi0x_Scott_5.RData",sep="/"))

pi0StoreyMean <- mean(apply(pValuesSims, 1, function(p){qvalue(p)$pi0}))

plotMeanPi0(pi0, pi0MeansVars, pi0hatScottMean, pi0StoreyMean, tme=tme, main="V",
            ylim=c(0,1))
legend("topright", inset=c(-0.45,0),##x=-0.2, y=0.45,##"bottomright", ##x=-100, y=0.3,
       legend=c("Truth",
                "BL (Linear)",
                "Scott T (Linear)",
                "Storey"),
       col=c("black",
             "orange",
             "blue",
```

```
            "brown"),
       bty="n",
       lwd=c(3,3,3,3), lty=c(1,1,1,1),
       cex=1.2, x.intersp=0.2, y.intersp=1.0)
```



Session info:

```
devtools::session_info()
```

```
## Session info -------------------------------------------------

##  setting  value
##  version  R version 3.3.1 (2016-06-21)
##  system   x86_64, mingw32
##  ui       RTerm
##  language (EN)
##  collate  English_United States.1252
##  tz       America/New_York
##  date     2018-09-10

## Packages -----------------------------------------------------

##  package    * version date       source
##  colorspace   1.2-6   2015-03-11 CRAN (R 3.3.1)
##  devtools     1.12.0  2016-06-24 CRAN (R 3.3.3)
##  digest       0.6.12  2017-01-27 CRAN (R 3.3.3)
##  evaluate     0.10    2016-10-11 CRAN (R 3.3.1)
##  ggplot2      2.2.1   2016-12-30 CRAN (R 3.3.3)
##  gtable       0.2.0   2016-02-26 CRAN (R 3.3.1)
```

```
##  highr        0.6     2016-05-09 CRAN (R 3.3.1)
##  knitr      * 1.17    2017-08-10 CRAN (R 3.3.3)
##  lazyeval     0.2.0   2016-06-12 CRAN (R 3.3.1)
##  magrittr     1.5     2014-11-22 CRAN (R 3.3.1)
##  MASS       * 7.3-45  2016-04-21 CRAN (R 3.3.1)
##  memoise      1.0.0   2016-01-29 CRAN (R 3.3.1)
##  munsell      0.4.3   2016-02-13 CRAN (R 3.3.1)
##  plyr         1.8.4   2016-06-08 CRAN (R 3.3.1)
##  qvalue     * 2.4.2   2016-05-16 Bioconductor
##  Rcpp         0.12.13 2017-09-28 CRAN (R 3.3.3)
##  reshape2     1.4.1   2014-12-06 CRAN (R 3.3.1)
##  rlang        0.1.4   2017-11-05 CRAN (R 3.3.3)
##  scales       0.4.1   2016-11-09 CRAN (R 3.3.3)
##  stringi      1.1.1   2016-05-27 CRAN (R 3.3.0)
##  stringr      1.2.0   2017-02-18 CRAN (R 3.3.3)
##  tibble       1.3.3   2017-05-28 CRAN (R 3.3.3)
##  withr        1.0.2   2016-06-20 CRAN (R 3.3.1)
```