kfmodel_test.R

high

Mon Apr 30 17:28:39 2018

```
# Compare results of R and Matlab versions of the KF Model function
```

```
# Setup
```

```
# Clear workspace of all objects and unload all extra (non-base) packages
rm(list = ls(all = TRUE))
if (!is.null(sessionInfo()$otherPkgs)) {
    res <- suppressWarnings(
        lapply(paste('package:', names(sessionInfo()$otherPkgs), sep=""),
               detach, character.only=TRUE, unload=TRUE, force=TRUE))
}

# Install pacman if needed
my_repo <- 'http://cran.r-project.org'
if (!require("pacman")) {install.packages("pacman", repos = my_repo)}
```

```
## Loading required package: pacman
```

```
# Get results from R
```

```
set.seed(1)
HR <- rnorm(20, 80, 20)
write.table(HR, 'HR.csv', row.names = F, col.names = F, sep = ',', quote = F)

source('kfmodel.R')
CT_r <- kf_model(HR, 37)
```

```
# Get results from Matlab
```

```
pacman::p_load_gh('renozao/RcppOctave')

o_source('kfmodel.m')
CT_m <- .CallOctave('KFModel', HR, 37)
```

```
# Compare results
```

```
# Compare results from running R function with running Matlab function

setdiff(CT_r, CT_m)
```

```
## numeric(0)
```

```
# If results match then previous command produces "numeric(0)"

identical(CT_r, CT_m)
```

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

```
# If results match then previous command produces "TRUE"

# Display results
```

```
CT_r
```

```
##  [1] 36.99931 36.99996 36.99713 37.00536 37.00774 37.00224 37.00686
##  [8] 37.01430 37.02066 37.01753 37.03632 37.04126 37.03244 37.00029
## [15] 37.01863 37.01842 37.01868 37.03530 37.04956 37.05950
```

```
# Previous command should show same results as running in Octave/Matlab:
cmd <- 'echo "source(\\"kfmodel.m\\");
             HR = csvread(\\"HR.csv\\");
             disp(sprintf(\\"%0.5f\\n\\",KFModel(HR, 37)))" | octave'
out <- system(cmd, intern = T, ignore.stdout = F, ignore.stderr = F, wait = T)
out
```

```
##  [1] "36.99931" "36.99996" "36.99713" "37.00536" "37.00774" "37.00224"
##  [7] "37.00686" "37.01430" "37.02066" "37.01753" "37.03632" "37.04126"
## [13] "37.03244" "37.00029" "37.01863" "37.01842" "37.01868" "37.03530"
## [19] "37.04956" "37.05950" ""          ""
```

```
# Parse (character string) results and store in a numeric vector
CT_o <- as.vector(na.omit(as.numeric(out)))

# Compare results as before

setdiff(round(CT_r, 5), round(CT_o, 5))
```

```
## numeric(0)
```

```
# If results match then previous command produces "numeric(0)"

identical(round(CT_r, 5), round(CT_o, 5))
```

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

```
# If results match then previous command produces "TRUE"
```