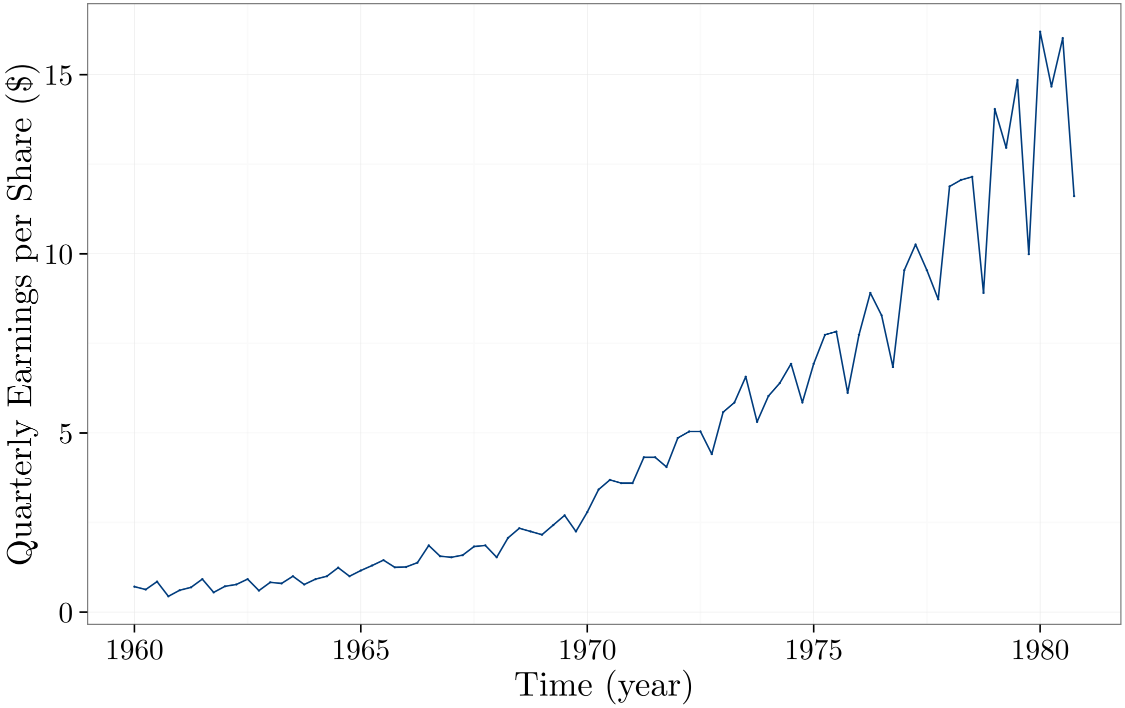
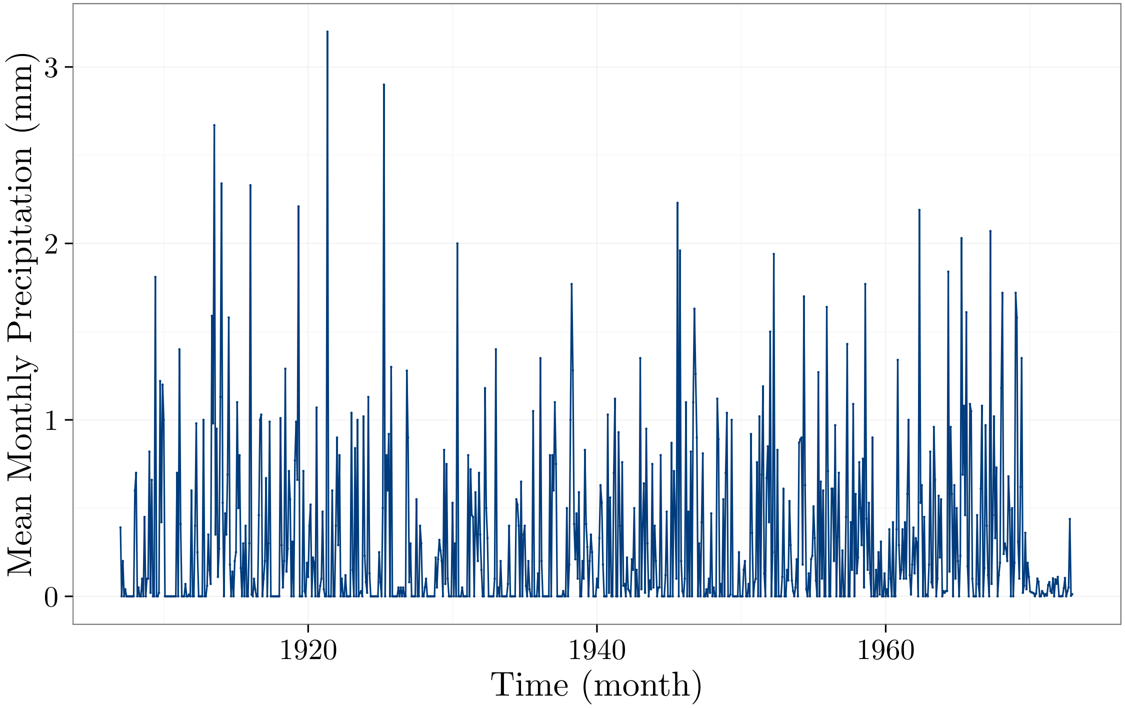
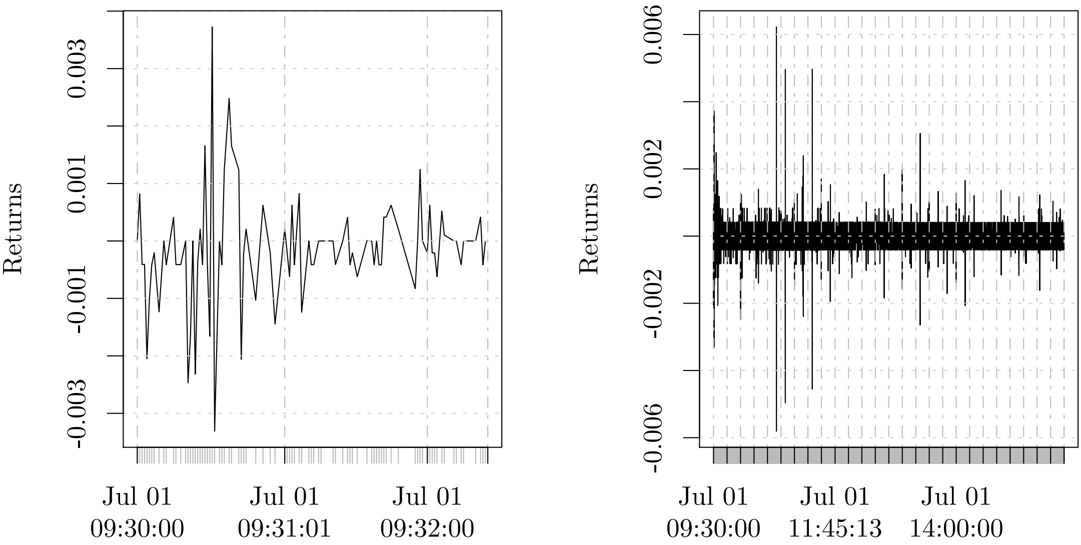
```
library(gmwm)

## Loading required package:  ggplot2

library(tikzDevice)
library(astsa)

# Load data
data(jj, package = "astsa")

# Construct gts object
jj = gts(jj, start = 1960, freq = 4, name = 'Johnson and Johnson Quarterly Earnings',
         unit = "year")

# Plot time series
## I need the amssymb package because I use \mathcal and \mathbb
tikz("JJ.tex", width = 6, height = 3.8)
autoplot(jj) + ylab("Quarterly Earnings per Share (\\$)")
dev.off()

## pdf
##   2
```

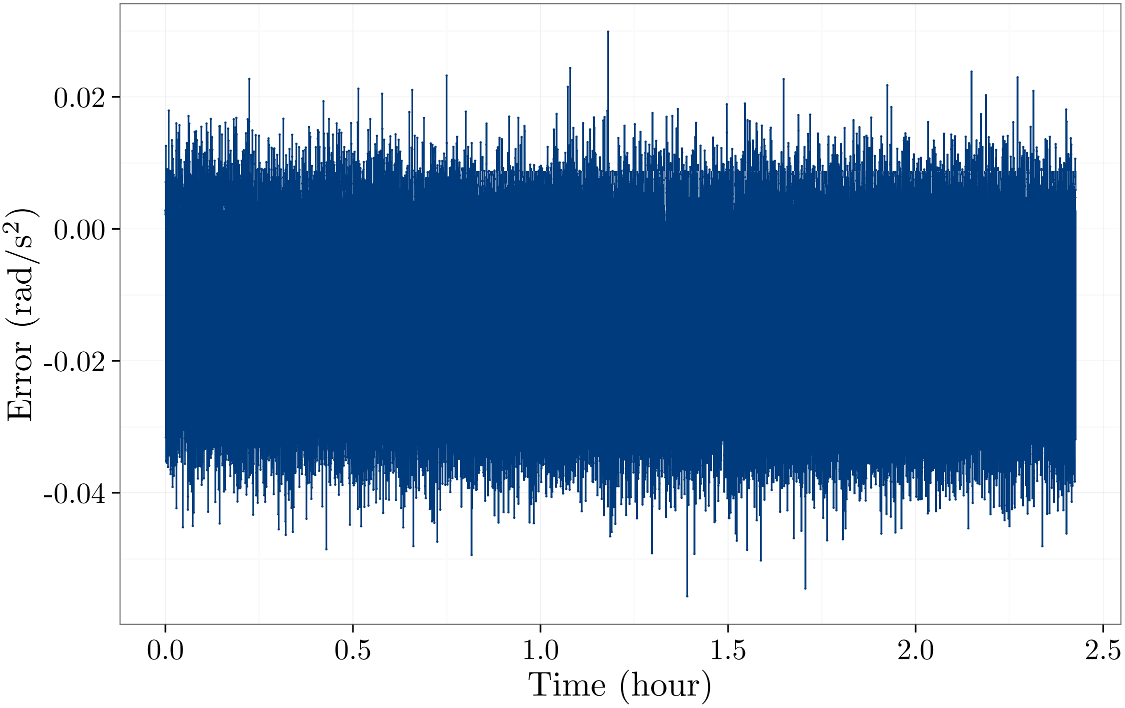
```
library(gmwm)
library(tikzDevice)

## @knitr example_hydro
# Load data
hydro = read.csv("/Users/stephane/Documents/Time series book/ITS/data/precipitation.csv", he

# Construct gts object
hydro = gts(hydro[,2], start = 1907, freq = 12, name = 'Precipitation Data',
            unit = "month")

# Plot data
tikz("HYDRO.tex", width = 6, height = 3.8)
autoplot(hydro)  +  ylab("Mean Monthly Precipitation (mm)")

## Warning:  Removed 1 rows containing missing values (geom_path).
## Warning:  Removed 1 rows containing missing values (geom_point).

dev.off()

## pdf
##   2
## @knitr example_Starbucks
library(gmwm)
library(tikzDevice)
library(timeDate)
library(highfrequency)

## Loading required package:  xts
## Loading required package:  zoo
##
## Attaching package:  ’zoo’
## The following objects are masked from ’package:base’:
##
##    as.Date, as.Date.numeric

# Load "high-frequency" Starbucks returns for Jul 01 2011
data(sbux.xts, package = "highfrequency")

tikz("SB.tex", width = 6, height = 3.8)
# Plot returns
par(mfrow = c(1,2))
plot(sbux.xts[1:89], main = " ", ylab = "Returns")
plot(sbux.xts, main = " ", ylab = "Returns")
dev.off()

## pdf
##   2
```

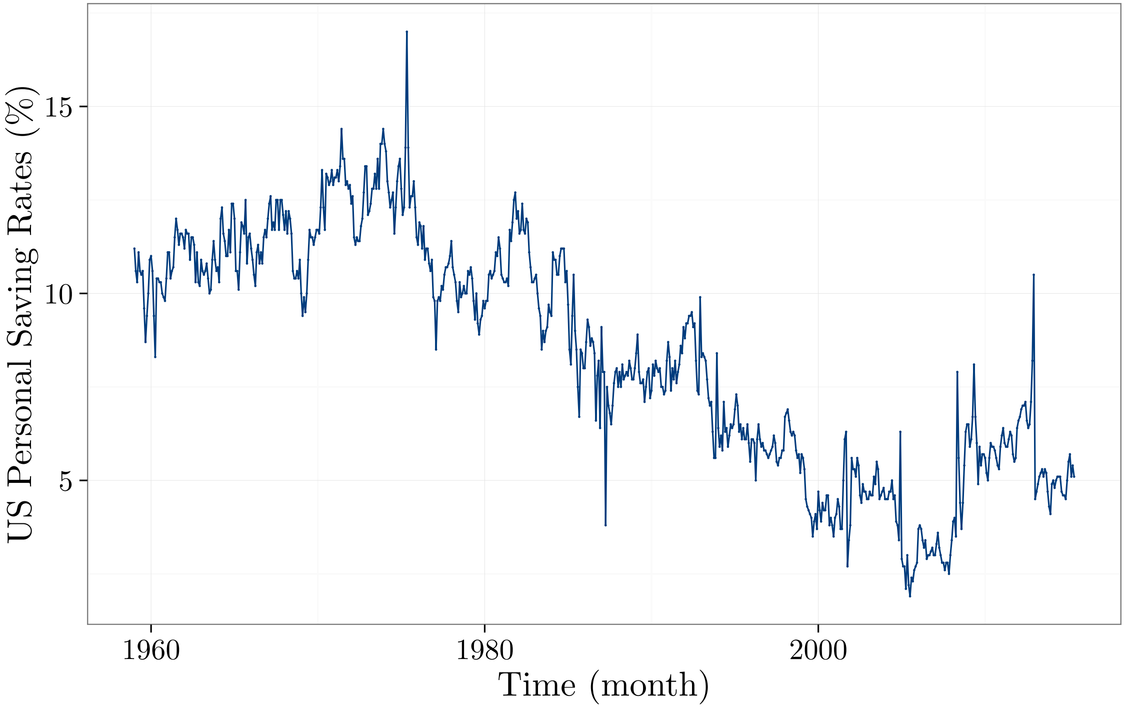
```
## @knitr example_IMU
# Load packages
library(gmwm)
library(imudata)

# Load IMU data
data(imu6, package = "imudata")

# Trim data
yt = imu6[,1] - mean(imu6[,1])
xt = rep(NA, floor(length(yt)/100))
counter = 0
for (i in 1:length(yt)){
  if (i %% 100 == 0){
    counter = counter + 1
    inter_max = max(yt[((i-100)+1):i])
    inter_min = min(yt[((i-100)+1):i])
```


Quarterly Earnings per Share ($)
0
5
10
15
1960
1965
1970
1975
1980
Time (year)


Mean Monthly Precipitation (mm)
0
1
2
3
1920
1940
1960
Time (month)


Returns
0.003
0.001
-0.001
-0.003
Jul 01
09:30:00
Jul 01
09:31:01
Jul 01
09:32:00
Returns
0.006
0.002
-0.002
-0.006
Jul 01
09:30:00
Jul 01
11:45:13
Jul 01
14:00:00


0.02
0.00
-0.02
-0.04
Error (rad/s^2)
0.0
0.5
1.0
1.5
2.0
2.5
Time (hour)


US Personal Saving Rates (%)
15
10
5
1960
1980
2000
Time (month)