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mon.ACF.de.bonhomme = function(Xt, type = "ACF"){
  # Inputs:
  # Xt -> time series
  # type -> type of graphs: "ACF", "ACF/PACF" or "RACF"

  # Compute ACF
  Yt = gts(Xt, name = "ACF")
  acf.graph = plot(ACF(Yt))

  if (type == "ACF"){
    acf.graph
  }else{
    if (type == "ACF/PACF"){
      # Compute PACF
      Zt = gts(Xt, name = "PACF")
      pacf = acf(Xt, type = "partial", plot = FALSE)
      inter = ACF(Zt)
      inter[,] = c(NA,pacf$acf)
      pacf.graph = plot(inter)
      grid.arrange(acf.graph,pacf.graph, nrow = 1)
    }else{
      if (type == "RACF"){
        Yt = gts(Xt, name = "Classical ACF")
        acf.graph = plot(ACF(Yt))

        Wt = gts(Xt, name = "Robust ACF")
        racf = robacf(Xt, plot=FALSE)$acf
        inter = ACF(Wt)
        inter[,] = racf
        racf.graph = plot(inter)
        grid.arrange(acf.graph,racf.graph, nrow = 1)
      }else{
        cat("Error")
      }
    }
  }
}

make.theo.acf.pacf = function(ar, ma){
  ACF.theo = ARMAacf(ar = ar, ma = ma, lag.max = 30)
  PACF.theo = ARMAacf(ar = ar, ma = ma, lag.max = 30, pacf = TRUE)
  Xt = gen.gts((WN(sigma2 = 1)), n = 10^2)
  Yt = gts(Xt, name = "ACF")
  inter = ACF(Yt,)
  inter[,] = ACF.theo
}

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acf.graph = plot(inter, show.ci = FALSE)
Zt = gts(Xt, name = "PACF")
pacf = acf(Xt, type = "partial", plot = FALSE)
inter = ACF(Zt)
inter[,] = c(NA,PACF.theo)
pacf.graph = plot(inter, show.ci = FALSE)
grid.arrange(acf.graph,pacf.graph, nrow = 1)
}

```

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library(gmwm)

## Loading required package: ggplot2

library(tikzDevice)
library(gridExtra)
library(robcor)
library(astsa)

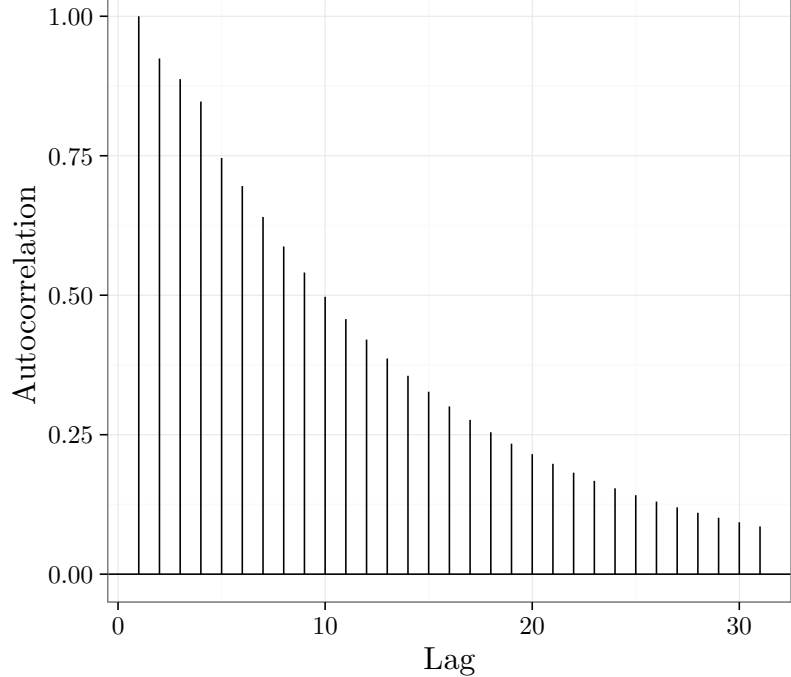
# tikz("ex1.tex", width = 5, height = 4)
# #
#
# model = ARMA(ar = c(.5, .25, .125) ,ma = c(.32,.59,1.2,-.3))
# model2 = ARMA(ar = c(1.5, -.75) ,ma = c(.78,-.58,1))
#
# make.theo.acf.pacf(ar = ar.coef, ma = ma.coef)
# make.theo.acf.pacf(ar = ar.coef2, ma = ma.coef)
#
# Xt = gen.gts(model)
# Xt2 = gen.gts(model2)
#
#
# tikz("ex2.tex", width = 8.5, height = 4)
# mon.ACF.de.bonhomme(Xt, type = "ACF/PACF")
# mon.ACF.de.bonhomme(Xt2, type = "ACF/PACF")

tikz("ex3.tex", width = 8.5, height = 4)
ar.coef = c(.5, .25, .125)
ar.coef2 = c(1.5, -.75)
ma.coef1 = c(.32,.59,1.2,-.3)
ma.coef2 = c(.78,-.58,1)
make.theo.acf.pacf(ar = ar.coef, ma = ma.coef1)

## Warning: Removed 1 rows containing missing values (geom.segment).

```

ACF



PACF

