# Catchment data loading
data("B222001001", package = "airGRdatasets")

# Data processing for GR4J (with Q for calibration)
prep <- PrepGR(DatesR = ts_obs$Date,
               Precip = ts_obs$Ptot,
               PotEvap = ts_obs$Evap,
               Qobs = ts_obs$Qmmd,
               HydroModel = "GR4J",
               CemaNeige = FALSE)

# Calibration using NSE score on raw Q
cal_raw <- CalGR(PrepGR = prep,
                 CalCrit = "NSE",
                 transfo = "",
                 WupPer = c("1999-01-01", "2001-12-31"),
                 CalPer = c("2002-01-01", "2016-12-31"))

# Calibration using NSE score on sqrt(Q)
cal_sqrt <- CalGR(PrepGR = prep,
                  CalCrit = "NSE",
                  transfo = "sqrt",
                  WupPer = c("1999-01-01", "2001-12-31"),
                  CalPer = c("2002-01-01", "2016-12-31"))

# Calibration using NSE score on log(Q)
cal_log <- CalGR(PrepGR = prep,
                 CalCrit = "NSE",
                 transfo = "log",
                 WupPer = c("1999-01-01", "2001-12-31"),
                 CalPer = c("2002-01-01", "2016-12-31"))

# Combination of simulated streamflow

# Computation of regime streamflow
tab_sim_reg <- SeriesAggreg(tab_sim_trsf,
                             Format = "%m",
                             ConvertFun = rep("mean", ncol(tab_sim_trsf) - 1))

# Graphical comparison between simulated and observed streamflow regimes
col_trsf <- c("black", rep("orangered", 3))
lty_trsf <- c(1, 1:3)

# Graphical comparison between simulated and observed streamflow regimes