Graphical user interface, text, application, Word

Description automatically generated

plotts.wge(d$Indoor\_temperature\_room)parzen.wge(d$Indoor\_temperature\_room)parzen.wge(d$Indoor\_temperature\_room, trunc = 300)IRT\_1 = artrans.wge(d$Indoor\_temperature\_room,1)acf(IRT\_1,lag.max = 200)acf(IRT\_1,lag.max = 200)IRT\_1 = artrans.wge(d$Indoor\_temperature\_room,1)IRT\_1\_96 = artrans.wge(IRT\_1, phi.tr = c(rep(0,95),1))aic5.wge(IRT\_1\_96)aic5.wge(IRT\_1\_96, type = "bic")e = est.ar.wge(IRT\_1\_96,p = 3)e$phiIRT\_1\_96\_AR3 = artrans.wge(IRT\_1\_96, phi.tr = e$phi)ljung.wge(IRT\_1\_96\_AR3)ljung.wge(IRT\_1\_96\_AR3, K = 48)fore.arima.wge(d$Indoor\_temperature\_room,d = 1, s = 96, phi = e$phi, n.ahead = 96)fore.arima.wge(d$Indoor\_temperature\_room,d = 1, s = 96, phi = e$phi, n.ahead = 96, lastn = TRUE)roll.win.rmse.wge(d$Indoor\_temperature\_room,s = 96, d = 1, phi = e$phi, h = 96)

plot(seq(6500,6840,1), temp[6500 : 6840], type = "l",xlim = c(6500,6859),

ylim =c(35,70), ylab = "Avg Temp", main = "Temp Forecast")

lines(seq(6841,6859,1), preds\_avg\_temp$f, type = "l", col = "red")

Chart, bar chart

Description automatically generatedc

#MLP

flight\_small = flightdf[5131:6821,]

flight\_smallDF = data.frame(temperature = ts(flight\_small$avg\_temp))

#Using forecast average temp

fit\_mlp\_climate = mlp(ts(flight\_small$avg\_temp),reps = 4, comb = "mean")

fore\_mlp\_climate = forecast(fit\_mlp\_climate, h = 19)

flight\_smallDF\_fore = data.frame(climate = ts(fore\_mlp\_climate$mean))

flight\_smallDF\_fore

flight\_smallDF\_delay = data.frame(average\_delay = ts(flight\_small$avg\_dep\_delay))

#Using forecast Sunspots

fit\_mlp\_delay = mlp(ts(flight\_smallDF\_delay),reps = 2, comb = "mean")

fore\_mlp\_delay = forecast(fit\_mlp\_delay, h = 19)

fore\_mlp\_delay

flight\_smallDF\_delay\_fore = data.frame(average\_delay = ts(fore\_mlp\_delay$mean))

flight\_smallDF\_delay\_fore

# small temperature + predictions (predictions flight\_smallDF\_delay\_fore)

small\_temp\_fore = ts(c(ts(flight\_smallDF), fore\_mlp\_climate$mean))

head(small\_temp\_fore)

# climate\_variable = data.frame((climate = small\_temp\_fore),pressure = small\_pressure\_fore))

climate\_variable = data.frame(climate = small\_temp\_fore)

fit\_mlp = mlp(ts(flight\_small$avg\_dep\_delay),reps = 1, xreg = climate\_variable)

fit\_mlp

plot(fit\_mlp)

plot(flightdf$avg\_dep\_delay, type = "l")

lines(seq(5131,6840,1),fit\_mlp$mean,col = "blue")

fore\_mlp = forecast(fit\_mlp, h = 19, xreg = climate\_variable)

plot(fore\_mlp)

ASE = mean((flight\_smallDF\_delay$average\_delay[1673:1691] - fore\_mlp$mean)^2)

ASE

#ensemble

ensemble = (preds$fcst$flightdf[,1] + fore\_mlp$mean)/2

plot(SM$Melanoma, type = "l")

lines(seq(30,37,1),ensemble,col = "green")

ASE = mean((SM$Melanoma[30:37] - ensemble)^2)

ASE

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climate\_variable = data.frame(climate = small\_temp\_fore)

fit\_mlp = mlp(ts(flight\_small$avg\_dep\_delay),reps = 1, xreg = climate\_variable)

fit\_mlp

plot(fit\_mlp)

plot(flightdf$avg\_dep\_delay, type = "l")

# lines(seq(5131,6840,1),fit\_mlp$mean,col = "blue")

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