T2_FK

March 25, 2025

Instalando e carregando as bibliotecas utilizadas

[16]:
```
options(repr.plot.width=20, repr.plot.height=5)  # Ajuste os valores conforme
↪necessário
```

[2]:
```
library(pacman)
p_load(ggplot2,forecast,dlm,numDeriv,plotly)
```

Carregando as funções auxiliares, que não podem ser mostras aqui ainda

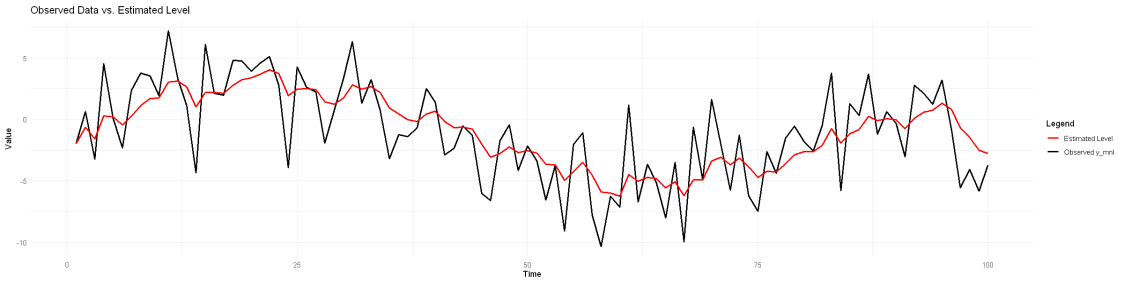
[4]:
```
source('funcoes_auxiliares.R')
```

[6]:
```
y_mnl <- simul_y_mnl(T=100,10,0.5,n_seed=1)

fit <- StructTS(y_mnl, "level")
```

[8]:
```
df <- data.frame(
  time = 1:length(y_mnl),
  observed = y_mnl,
  estimated_level = fitted(fit)[, "level"]
)
```

[9]:
```
# Extract estimated variances
sigma2_epsilon <- fit$coef["epsilon"]
sigma2_eta <- fit$coef["level"]
```

[17]:
```
ggplot(df, aes(x = time)) +
geom_line(aes(y = observed, color = "Observed y_mnl"), size = 1) +
geom_line(aes(y = estimated_level, color = "Estimated Level"), size = 1) +
scale_color_manual(values = c("Observed y_mnl" = "black", "Estimated Level" =
↪"red")) +
labs(
title = "Observed Data vs. Estimated Level",
x = "Time",
y = "Value",
color = "Legend"
) +

theme_minimal()
```


Observed Data vs. Estimated Level
Value
Time
Legend
Estimated Level
Observed y_mnl

[ ]: