Smoothing filter: Applies a default smoothing operator to attenuate high‑frequency components while preserving broader trends. Use as a baseline; for finer control consider dedicated smoothers like LOESS or splines.

Note: - Start with the default settings; if the result under/over-smooths, consider a more tailored filter (e.g., spline with spar, LOWESS with f).

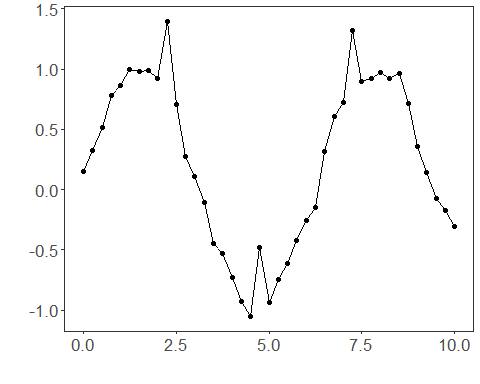
Objectives: This generic smoothing filter reduces short-term variation to reveal the underlying signal. It can be used as a quick denoising step when you do not need a specific smoothing family (e.g., MA, LOWESS, spline).

# Filter - Smooth  
  
# Install tspredit if needed  
#install.packages("tspredit")

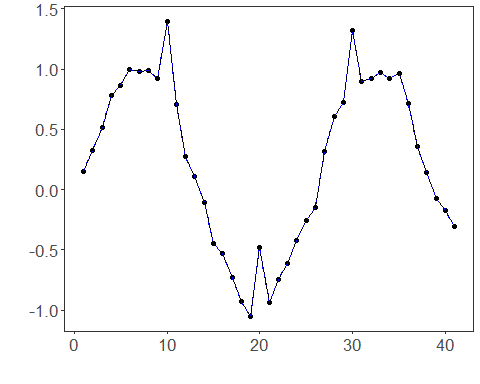
# Load packages  
library(daltoolbox)  
library(tspredit)

# Create a noisy example series  
data(tsd)  
y <- tsd$y  
noise <- rnorm(length(y), 0, sd(y)/10)  
spike <- rnorm(1, 0, sd(y))  
tsd$y <- tsd$y + noise  
tsd$y[10] <- tsd$y[10] + spike  
tsd$y[20] <- tsd$y[20] + spike  
tsd$y[30] <- tsd$y[30] + spike

library(ggplot2)  
# Visualize noisy input  
plot\_ts(x=tsd$x, y=tsd$y) + theme(text = element\_text(size=16))



# Apply generic smoothing  
  
filter <- ts\_fil\_smooth() # defaults provide light smoothing  
filter <- fit(filter, tsd$y)  
y <- transform(filter, tsd$y)  
  
# Compare original vs smoothed  
plot\_ts\_pred(y=tsd$y, yadj=y) + theme(text = element\_text(size=16))



References - T. Hastie, R. Tibshirani, and J. Friedman (2009). The Elements of Statistical Learning. Springer.