

The predicted values (found by least-squares estimation on the six difference equations) are:

$$\begin{aligned}x_1 &= 1.8225 \\x_2 &= 0.6075 \\x_3 &= -2.6025 \\x_4 &= 0.1725\end{aligned}$$

Comparing with the measurements

$$\begin{aligned}x_1 &= 2.95 \\x_2 &= 1.74 \\x_3 &= -1.45 \\x_4 &= 1.32\end{aligned}$$

and so the estimations appear to be very bad (38.23%, 65.09%, 79.48% and 13.07% off respectively).

However, if we add the measurements to the system of equations, and solve all 10 simultaneously, we get the estimates

$$\begin{aligned}x_1 &= 2.96 \\x_2 &= 1.746 \\x_3 &= -1.46 \\x_4 &= 1.314\end{aligned}$$

which are only 0.34%, 0.34%, 0.69% and 0.46% off respectively.