

EI (Environmental Instruments) O3

Contents

Device Information	2
Equations Used	2
Comparison Plots	3



Device Information

The calibration(s) were completed on:

- 18/08/21
- 17/03/22

Equations Used

$$\text{cRMSE}(R, L) = \sqrt{\text{mean}(L_i - R_i - \bar{L} + \bar{R})^2}$$

- R_i = reference measurement at time i for measurements 1 to n
- L_i = LCS (low cost sensor) measurement at time i for measurements 1 to n
- \bar{L} = mean LCS measurement
- \bar{R} = mean reference measurement

$$\text{RMSE}(R, L) = \sqrt{\text{mean}(R_i - L_i)^2}$$

- R_i = reference measurement at time i for measurements 1 to n
- L_i = LCS (low cost sensor) measurement at time i for measurements 1 to n
- n = number of measurements

$$\text{Bias}(R, L) = |\bar{L} - \bar{R}|$$

- \bar{L} = mean LCS measurement
- \bar{R} = mean reference measurement

Comparison Plots

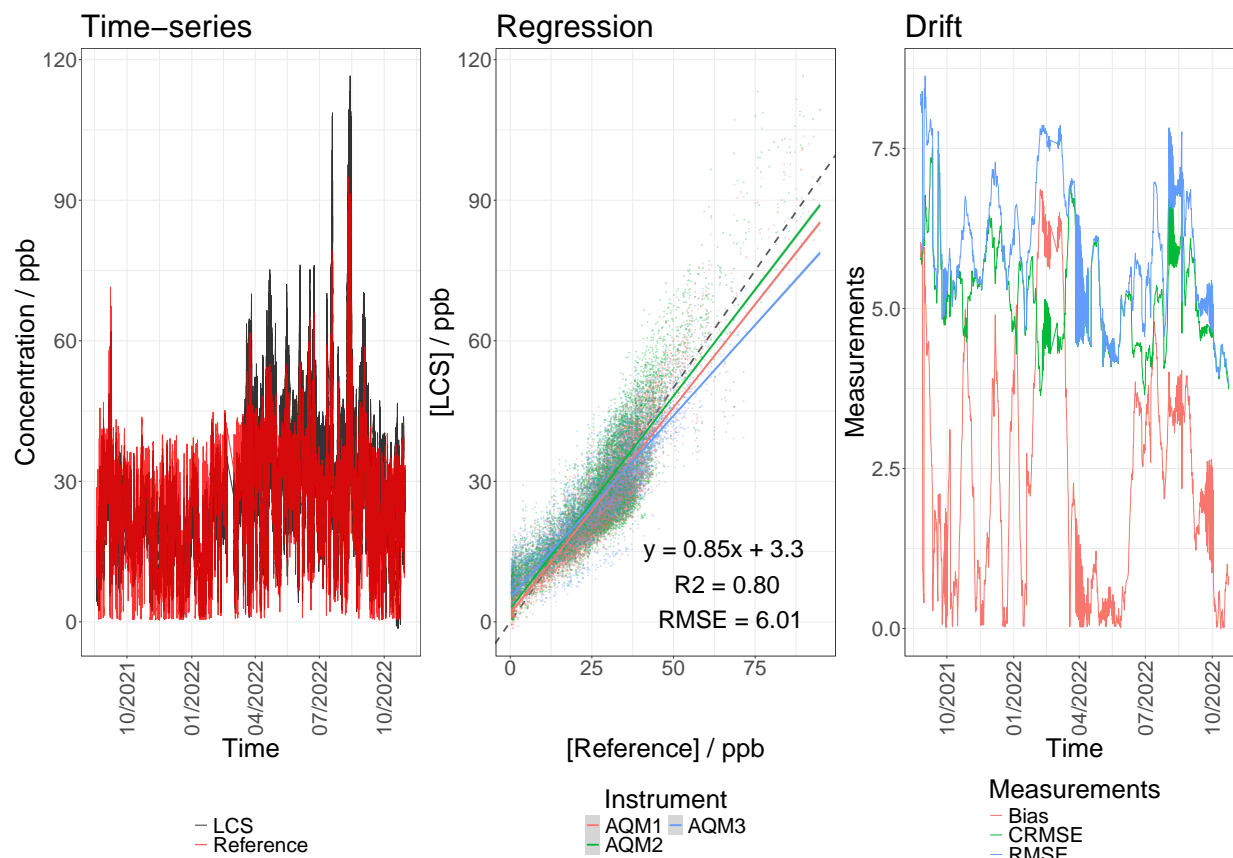


Figure 1: Quantitative evaluation. Column 1: Time-series plot of the LCS measurements (black line) vs the reference measurements (red line). Column 2: Regression plot against reference data. The grey dashed line represents $y=x$. Column 3: Measure of drift plot (blue line indicates root mean squared error, the red line represents the mean bias and the green line shows the centered root mean squared error).