

# Vortex (Vortex IoT) O3

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## Device Information

The calibration(s) were completed on:

- 29/11/21
- no second calibration

## 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

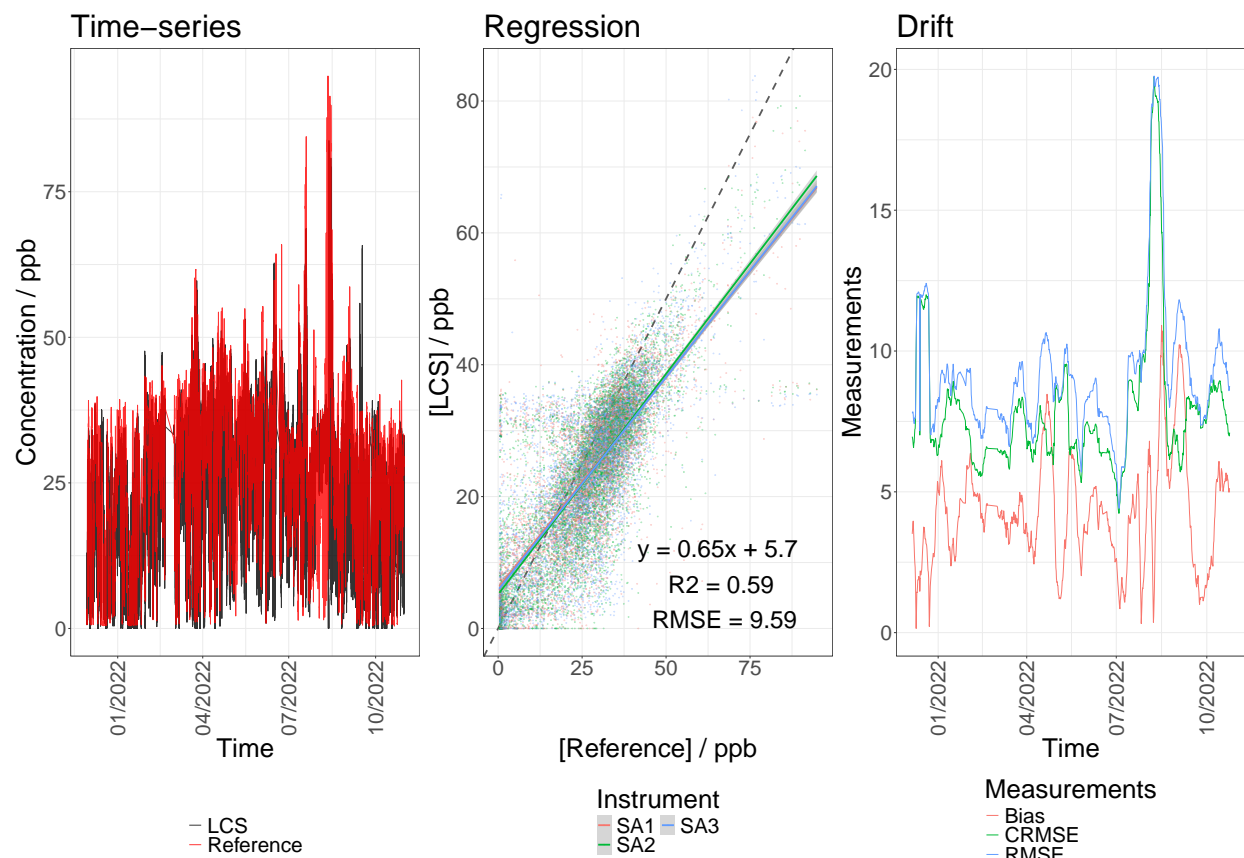


Figure 1: Quantitative evaluation. Column 1: Time-series plot of the LCS measurements (black line) vs the reference measurements (red line). Column 2: Regression plot against reference data. The grey dashed line represents  $y=x$ . Column 3: Measure of drift plot (blue line indicates root mean squared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