

Supporting Information for:

Evaluation of a low-cost optical particle counter (Alphasense OPC-N2) for ambient air monitoring

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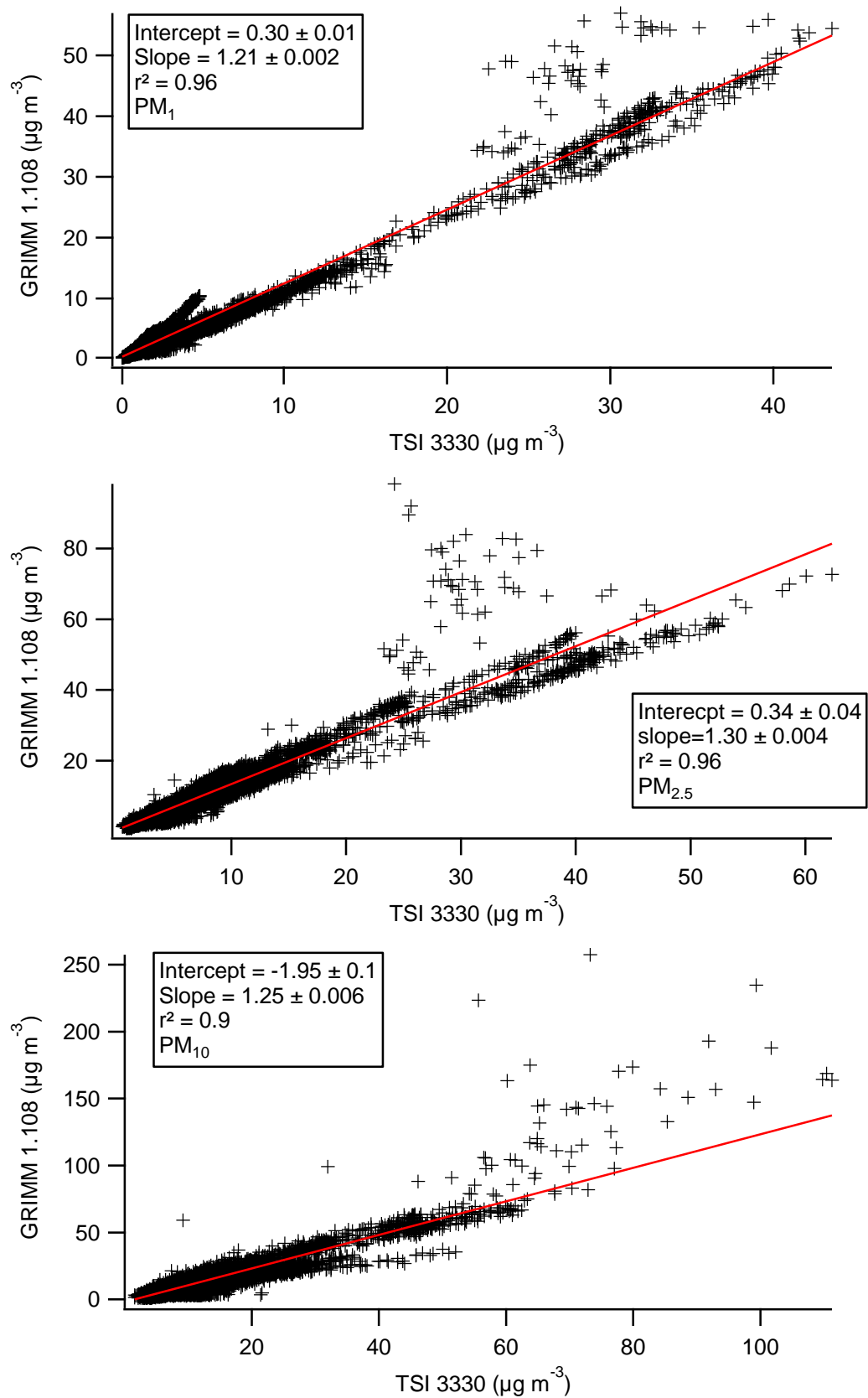


Fig S1: Comparison of the TSI 3330 and GRIMM PAS 1.108 at EROS during the September intensive measurement period for PM₁ (top), PM_{2.5} (middle) and PM₁₀ (bottom) mass concentrations.

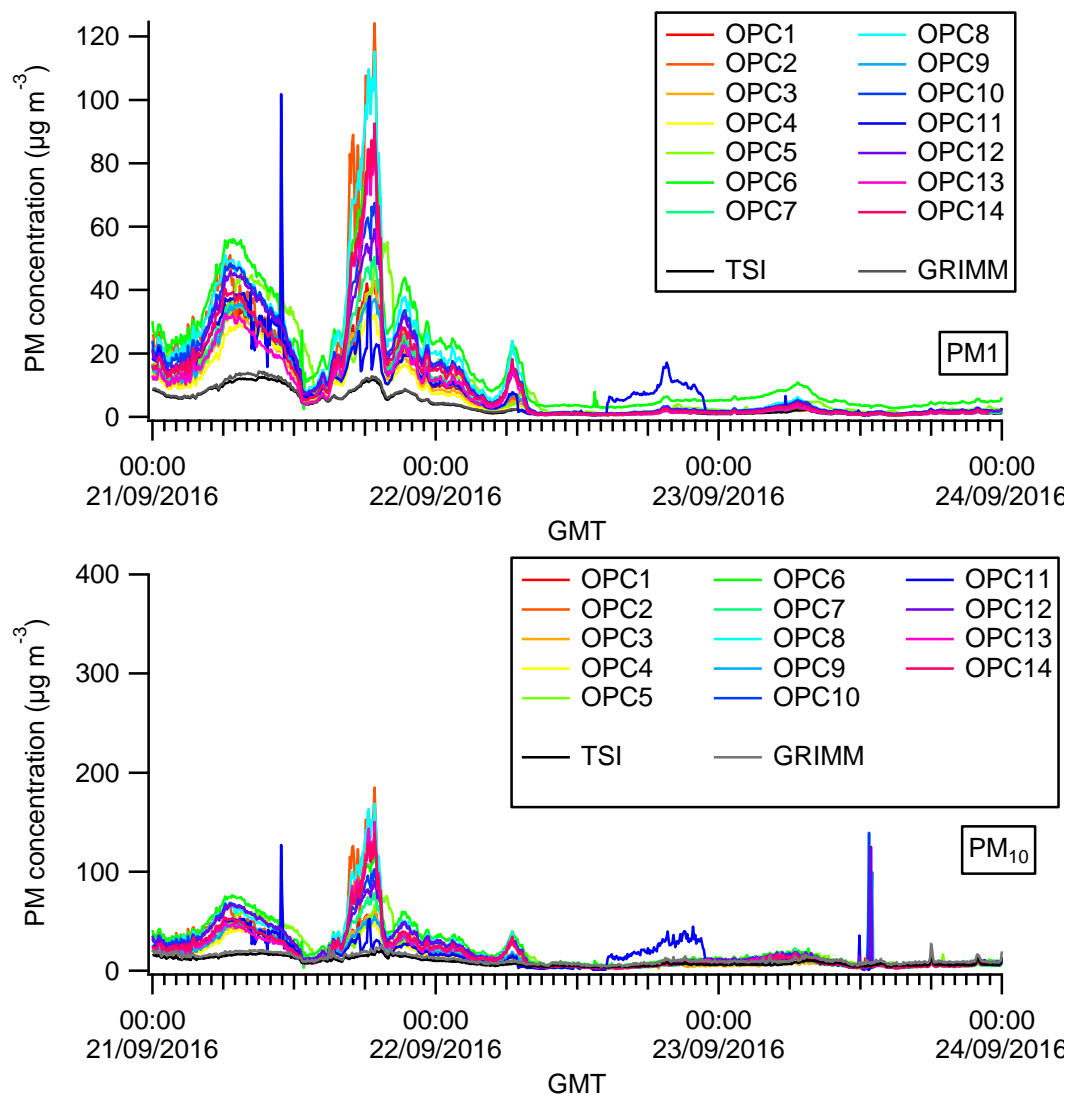


Figure S2: PM₁ and PM₁₀ concentrations measure by all OPC-N2 and the reference instruments, TSI and GRIMM for selected period with high data coverage.

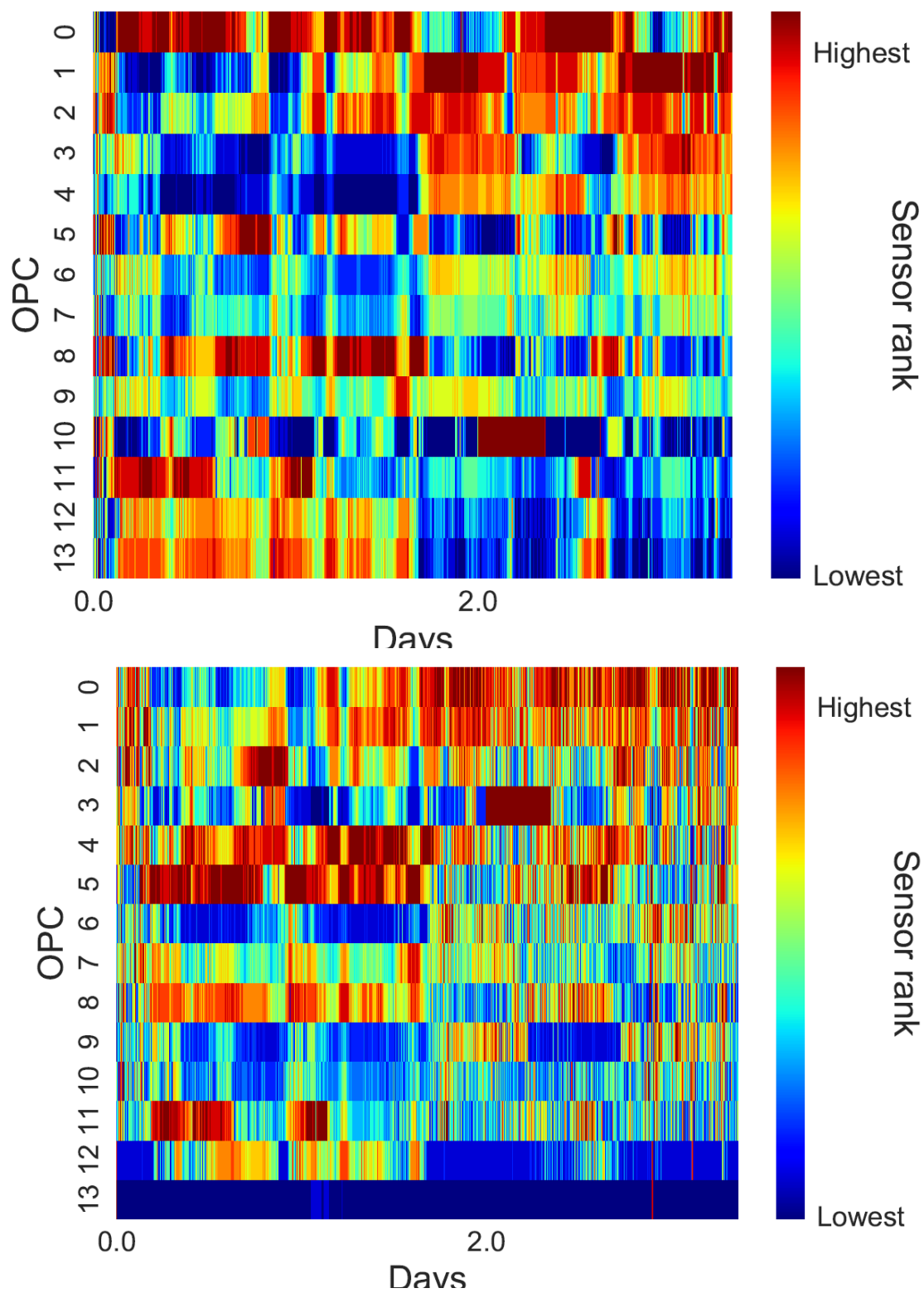


Figure S3: Rank order plot of OPC observations (1 min averaged at 10 μ m) over a 3 day period (21st – 24th of September), y-axis according to OPC ranking in the final hour of time series.

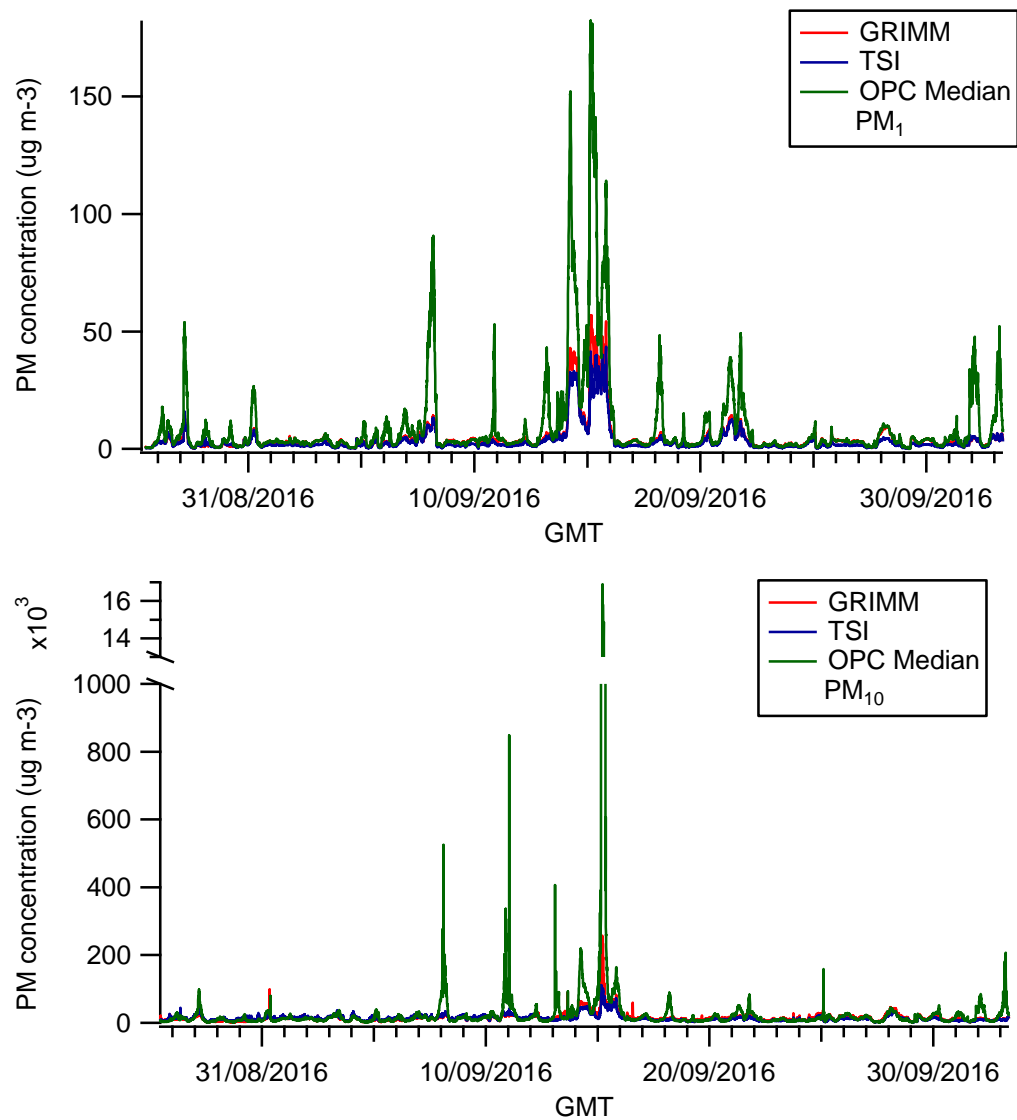


Fig S4: Time series of the measured PM1 and PM10 mass concentrations by TSI and GRIMM and the median mass concentration measured by the OPC-N2

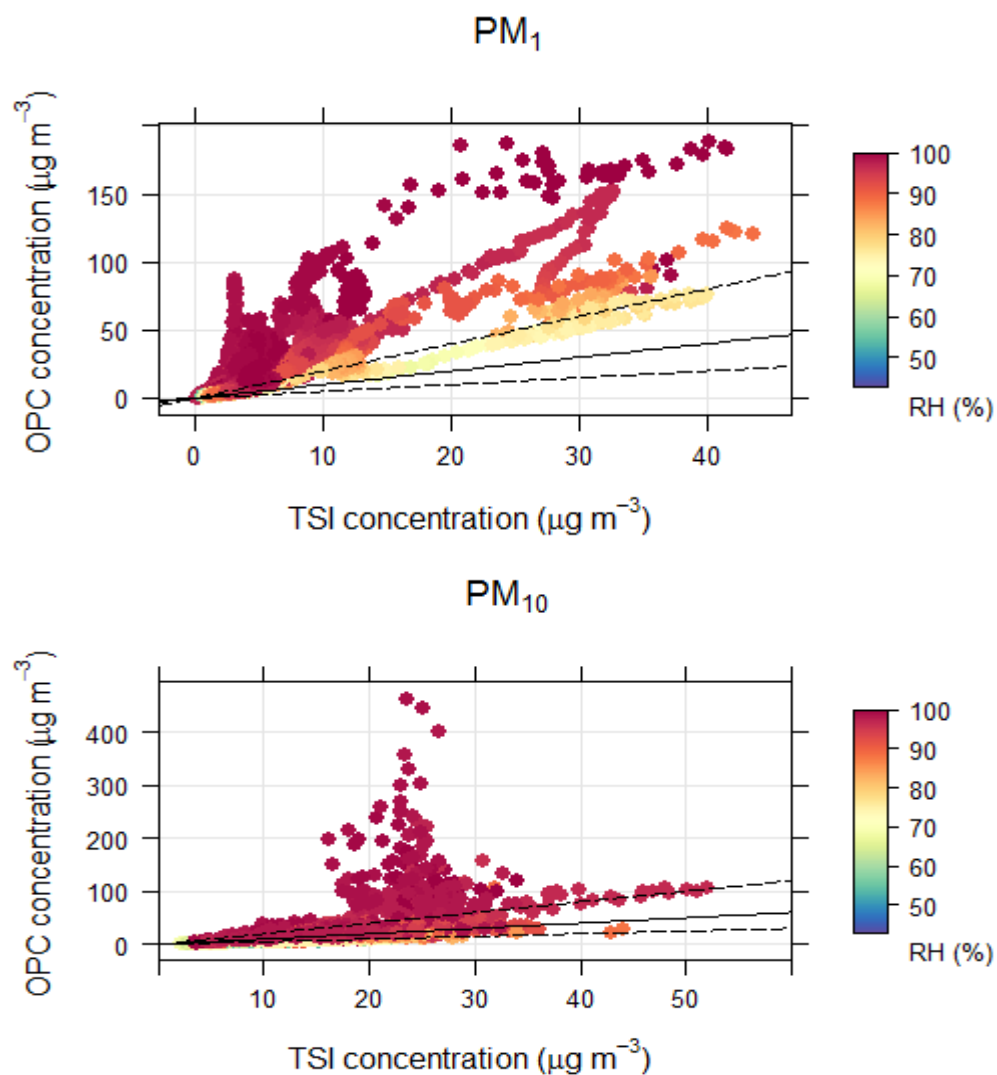


Figure S5: Measured concentrations by the TSI 3330 OPC compared to the median concentration measured by the 14 Alphasense OPCs for PM_1 and PM_{10} mass concentrations, coloured by the ambient relative humidity. Also shown are the 1:1 (solid) and 0.5:1 and 2:1 (dashed) lines.

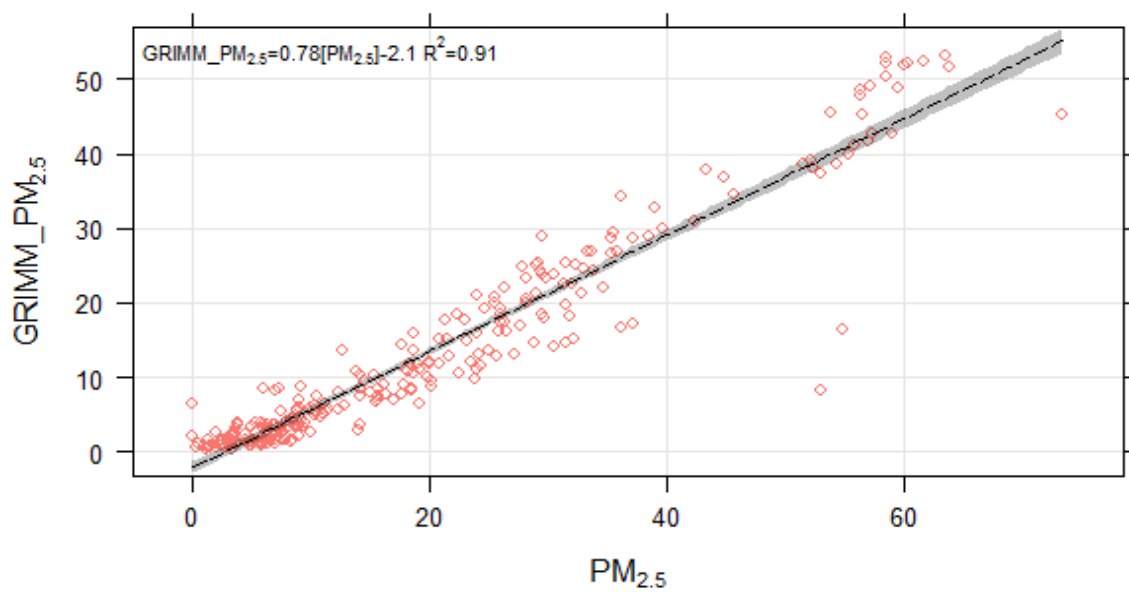
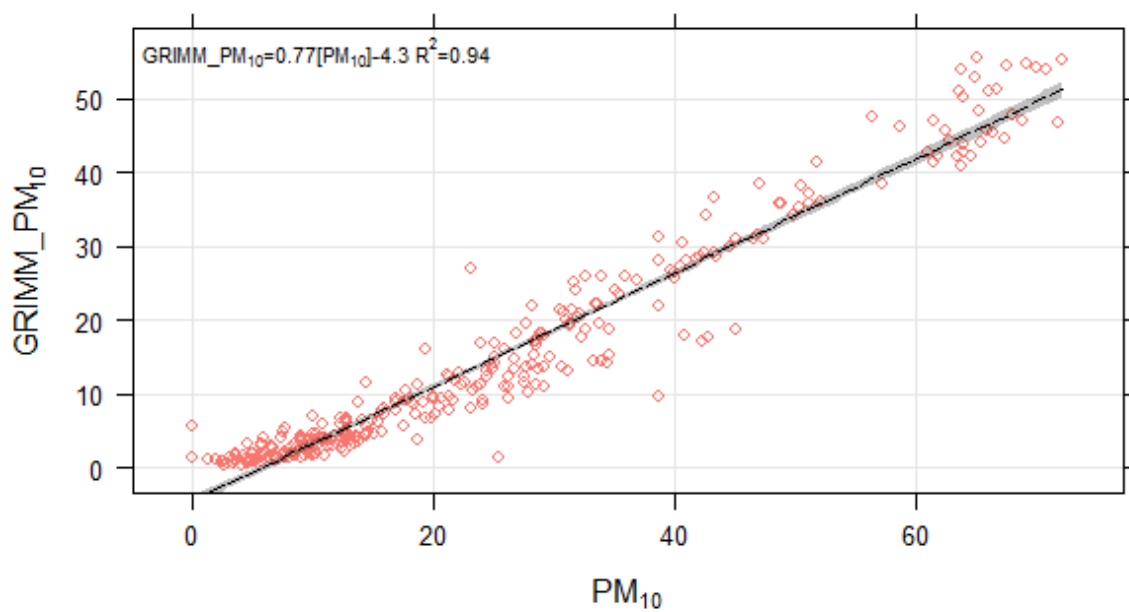


Figure S6: Comparison of the GRIMM and TEOM (y axis) during the measurements at Tyburn Rd

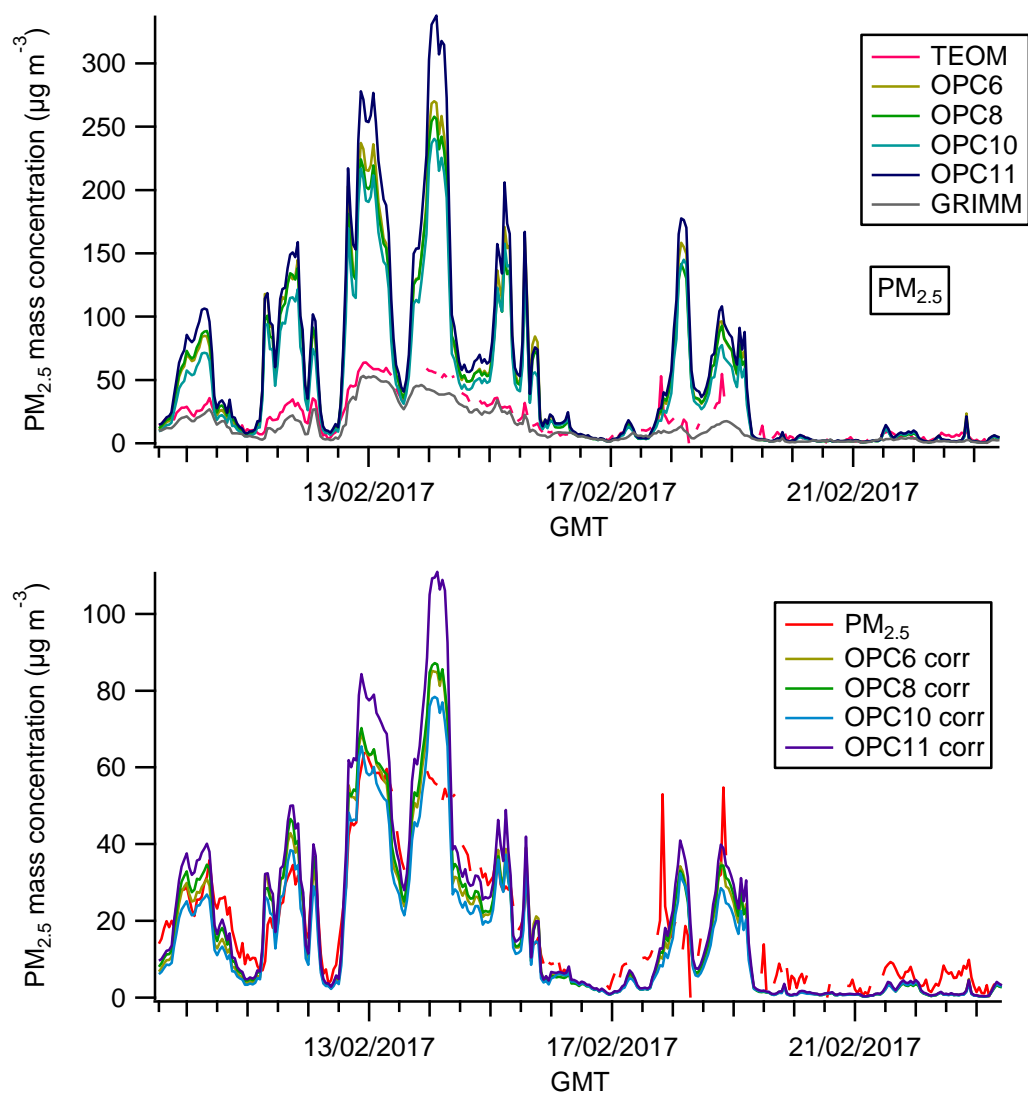


Figure S7: Time series of uncorrected OPC-N2 (top panel) and corrected OPC-N2 PM_{2.5} mass concentrations at Tyburn Rd. The TEOM and GRIMM concentrations shown for reference.

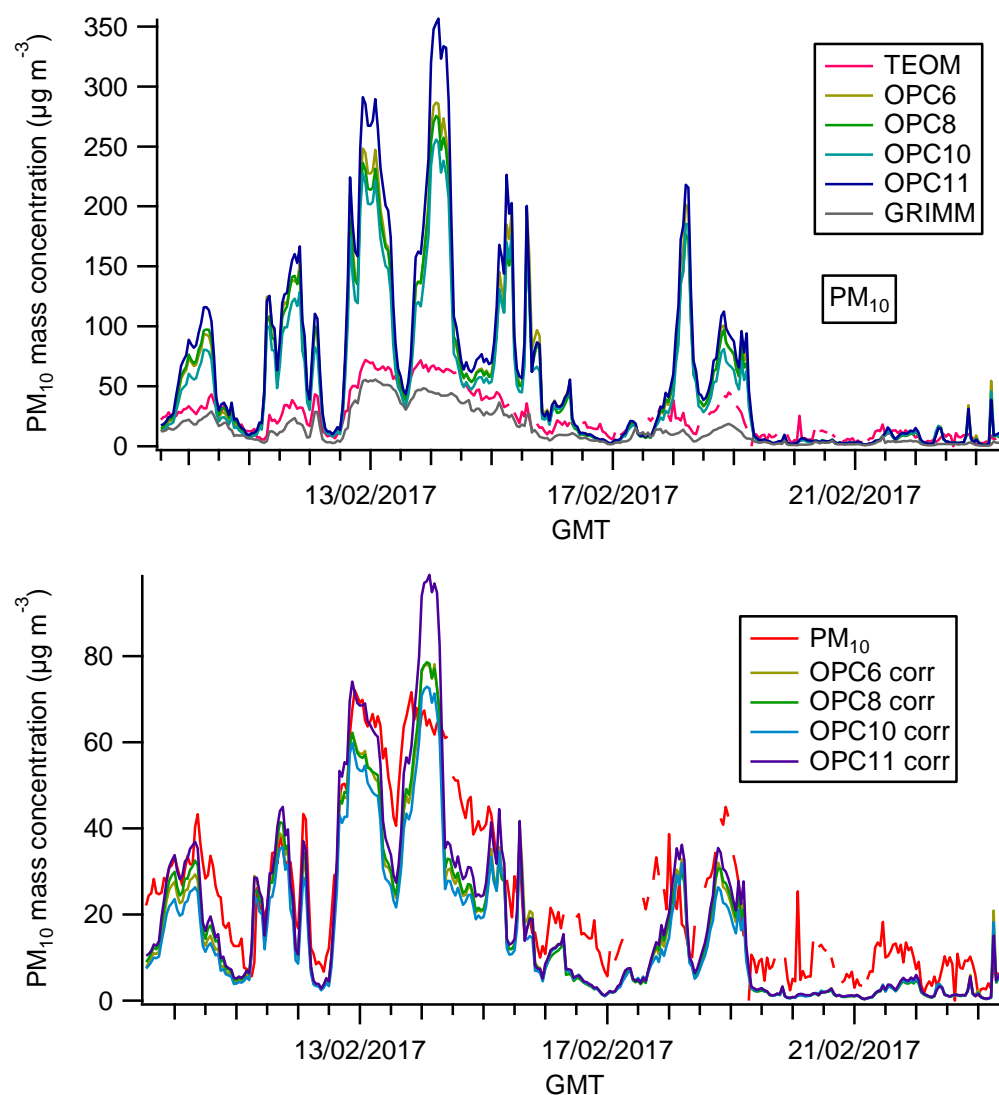


Figure S8: Time series of uncorrected OPC-N2 (top panel) and corrected OPC-N2 PM_{10} mass concentrations at Tyburn Rd. The TEOM and GRIMM concentrations shown for reference.

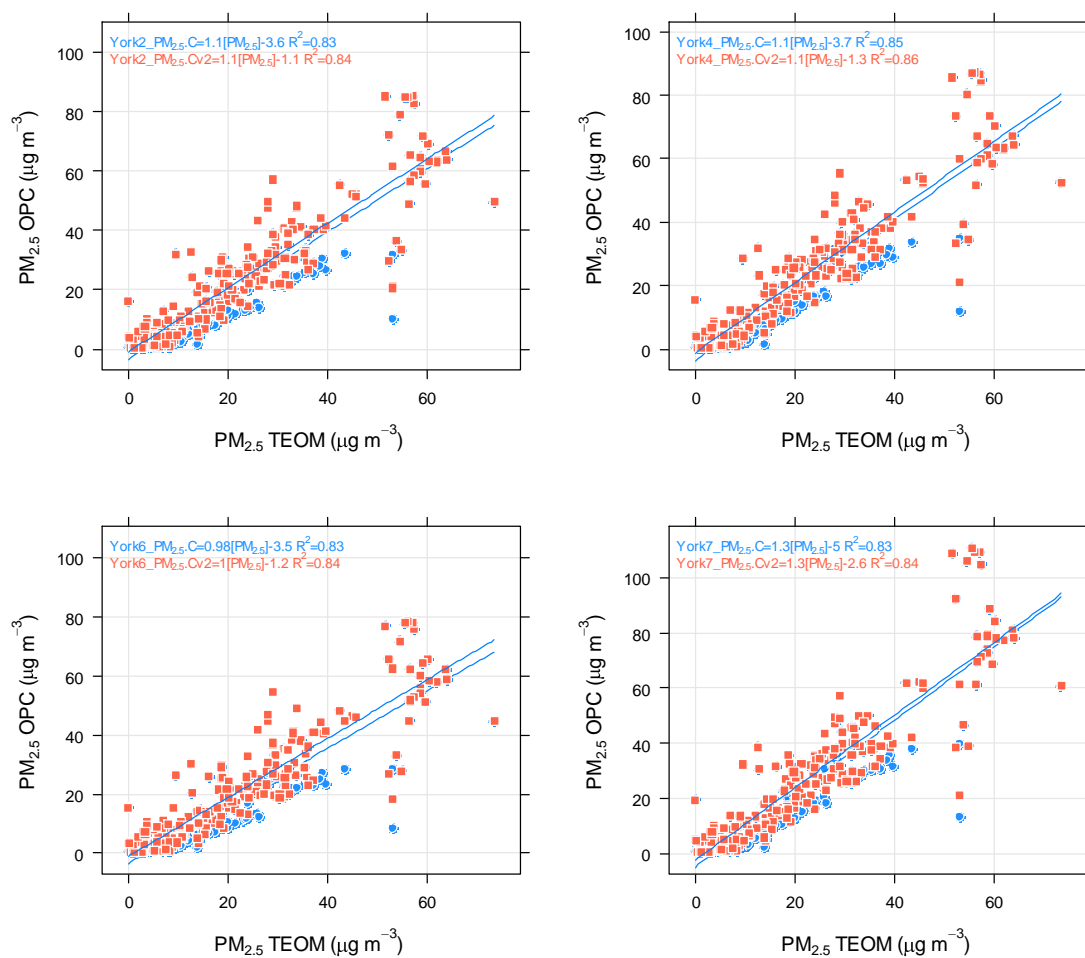


Figure S9: Scatterplots of corrected OPC-N2 against the TEOM for $\text{PM}_{2.5}$ mass concentrations. The two model approach (Cv2) is in red and the one model approach in blue.