Measurement of ambient NO_3 reactivity: Design, characterization and first deployment of a new instrument

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Supplementary Information

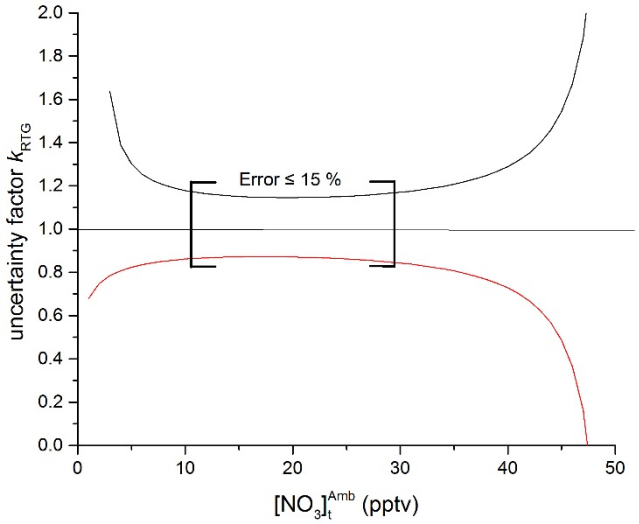

Fig. S1: Upper and lower bounds to the uncertainty in the reactivity measurement calculated for a fixed minimal detectable change (MDC_{NO3} = 2.5 pptv) in NO_3 (initially $[NO_3]_t^{ZA}$ = 50 pptv) for different reactivities resulting in various measured NO_3 mixing ratios at 10.5 s ($[NO_3]_t^{Amb}$). The horizontal line (y = 1) is the ideal case where the MDC_{NO3} tends to zero. The square brackets indicate the dynamic range in which the uncertainty associated with signal stability is ≤ 15 %. When $[NO_3]_t^{Amb}$ and $[NO_3]_t^{ZA}$ are very similar (reactivity tends to zero) or when NO_3 is entirely depleted (very high reactivity) the uncertainty increases rapidly.