Supplementary Figures to:

Assessment of ^{222}Radon progeny loss in long tubing based on static filter measurements in the laboratory and in the field

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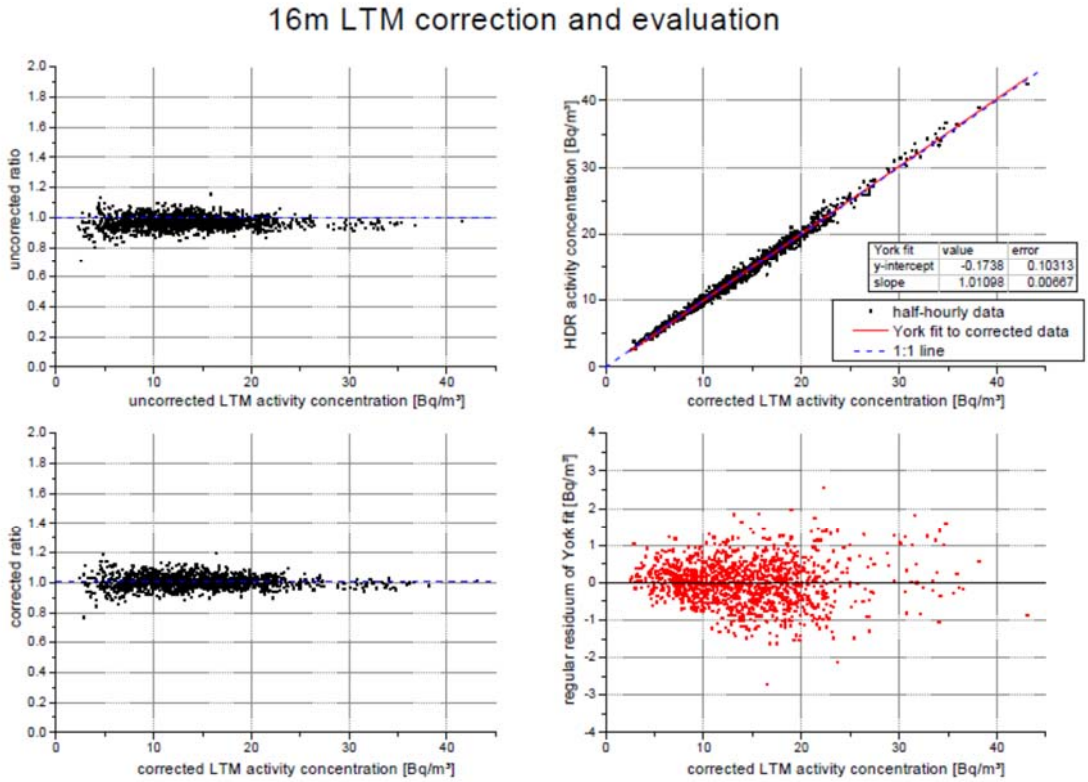
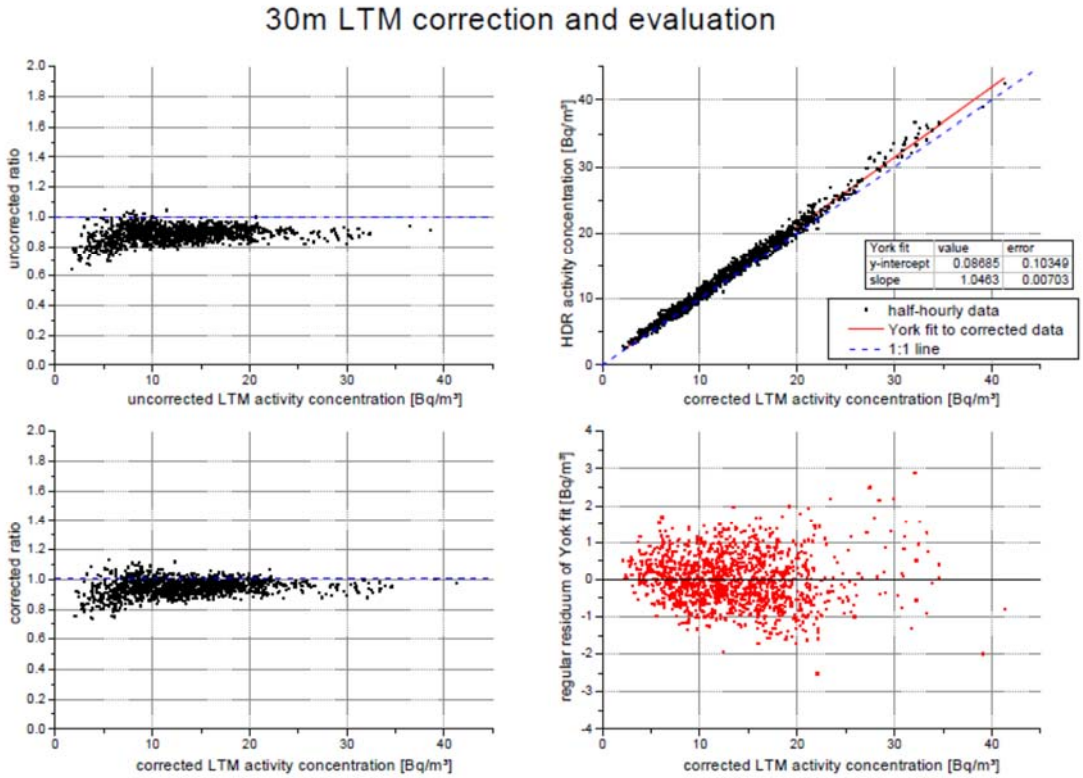
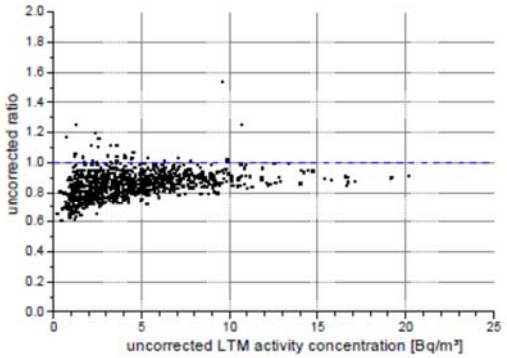
Supplementary Figures S1-S9:

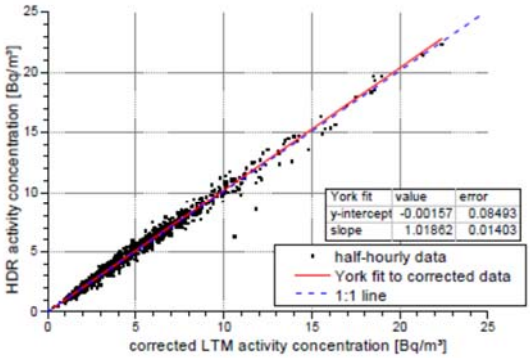
Evaluation of ^{214}Po activity concentrations using the empirical correction functions Eqs. 1 and 2 for loss of ^{222}Rn progeny in Decabon tubing of 8.2 mm ID and various lengths (16 m to 200 m). The upper left panels show the ratios between the line test monitor (LTM) sampling air via the Decabon tubing and the routine monitor (HD-R) sampling via a 0.5m Teflon tube, the lower left panels show the same ratio after correction of the LTM activities, the upper right panels show the correlation between HD-R and corrected LTM activity concentrations, the lower right panels display the residuum of activity concentrations from the fitted regression lines in the upper right panels.

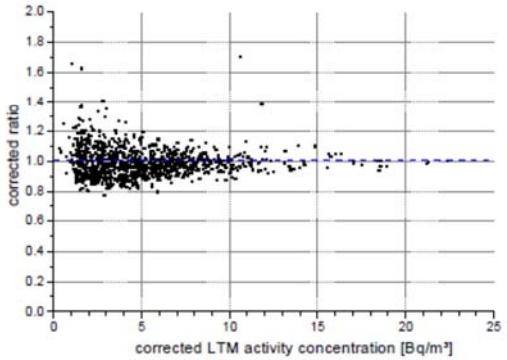


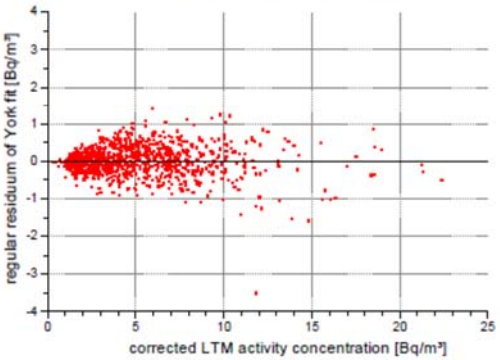

30m LTM correction and evaluation
uncorrected ratio
uncorrected LTM activity concentration [Bq/m³]
HDR activity concentration [Bq/m³]
corrected LTM activity concentration [Bq/m³]
York fit | value | error
y-intercept | 0.08685 | 0.10349
slope | 1.0463 | 0.00703
half-hourly data
York fit to corrected data
1:1 line
corrected ratio
corrected LTM activity concentration [Bq/m³]
regular residuum of York fit [Bq/m³]
corrected LTM activity concentration [Bq/m³]

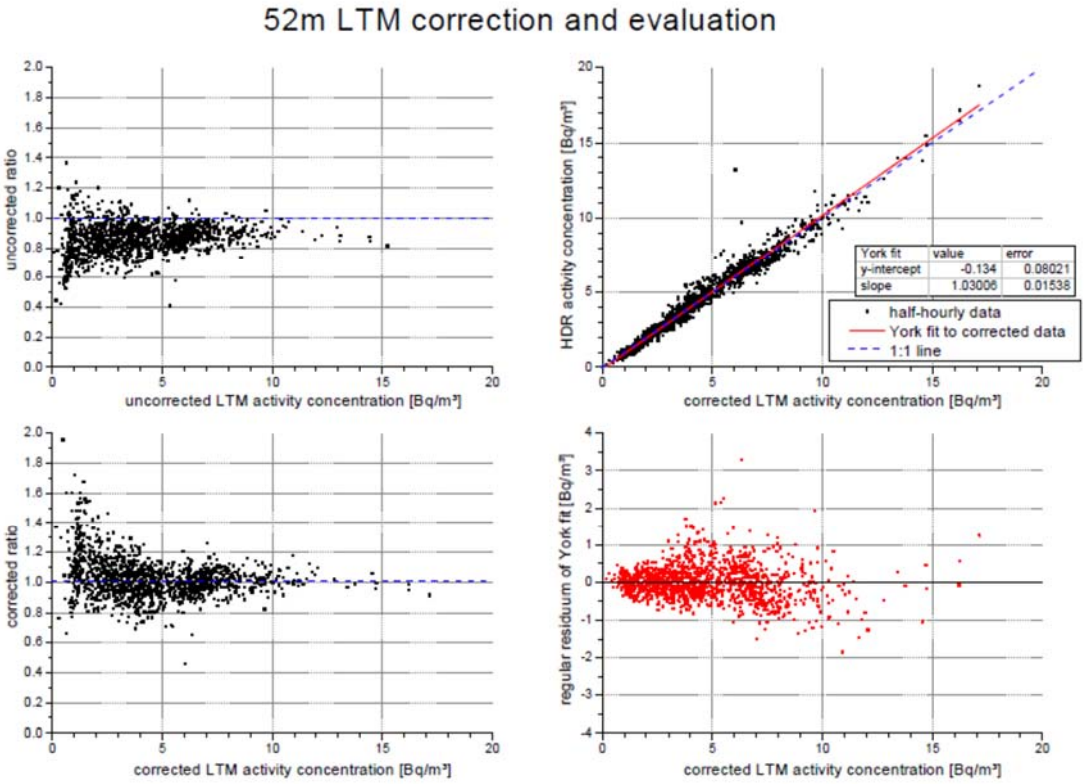
46m LTM correction and evaluation

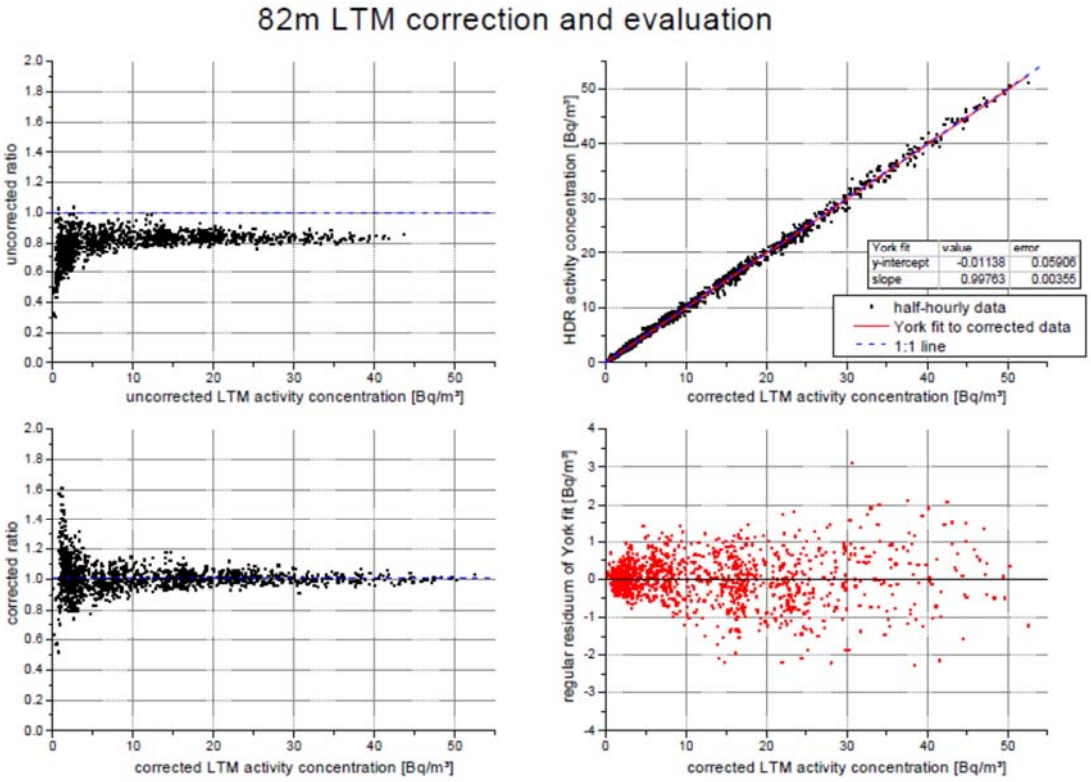




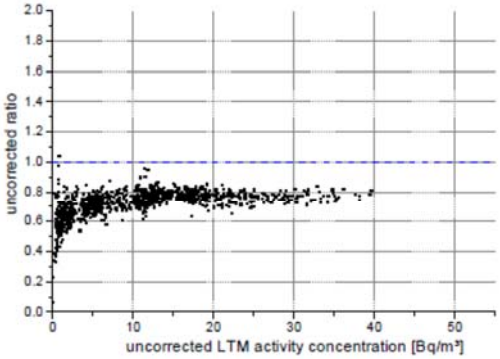


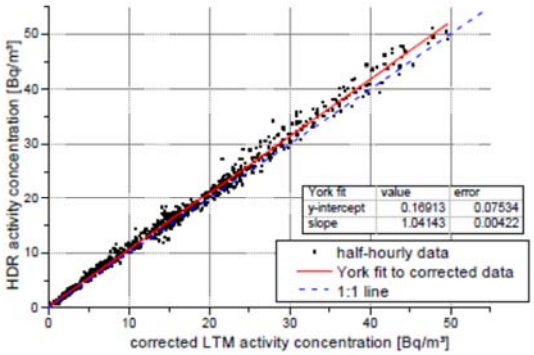


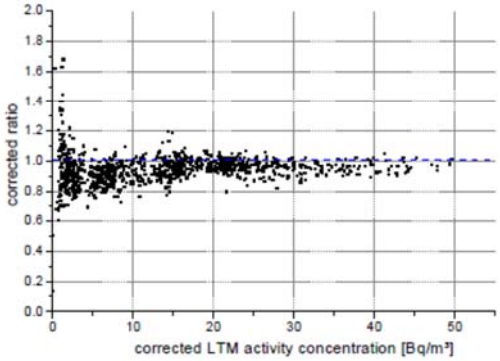

52m LTM correction and evaluation
uncorrected ratio
uncorrected LTM activity concentration [Bq/m³]
HDR activity concentration [Bq/m³]
corrected LTM activity concentration [Bq/m³]
York fit | value | error
y-intercept | -0.134 | 0.08021
slope | 1.03006 | 0.01538
half-hourly data
York fit to corrected data
1:1 line
corrected ratio
corrected LTM activity concentration [Bq/m³]
regular residuum of York fit [Bq/m³]
corrected LTM activity concentration [Bq/m³]

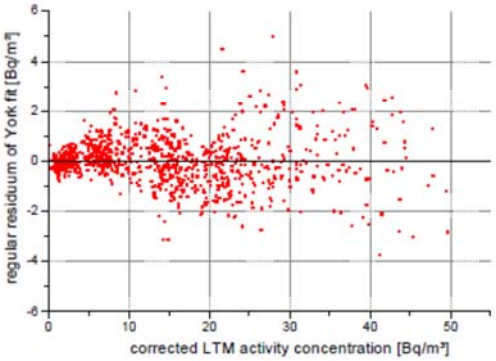

82m LTM correction and evaluation
uncorrected ratio
uncorrected LTM activity concentration [Bq/m³]
HDR activity concentration [Bq/m³]
corrected LTM activity concentration [Bq/m³]
York fit | value | error
y-intercept | -0.01138 | 0.05906
slope | 0.99763 | 0.00355
half-hourly data
York fit to corrected data
1:1 line
corrected ratio
corrected LTM activity concentration [Bq/m³]
regular residuum of York fit [Bq/m³]
corrected LTM activity concentration [Bq/m³]

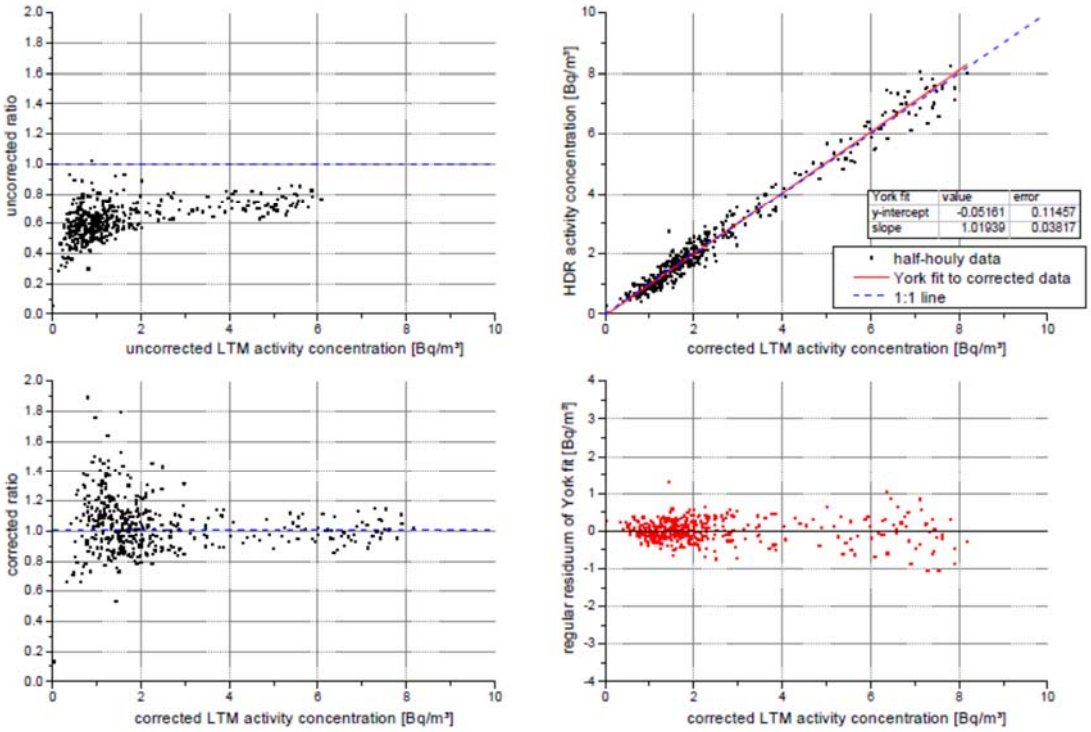
100m LTM correction and evaluation

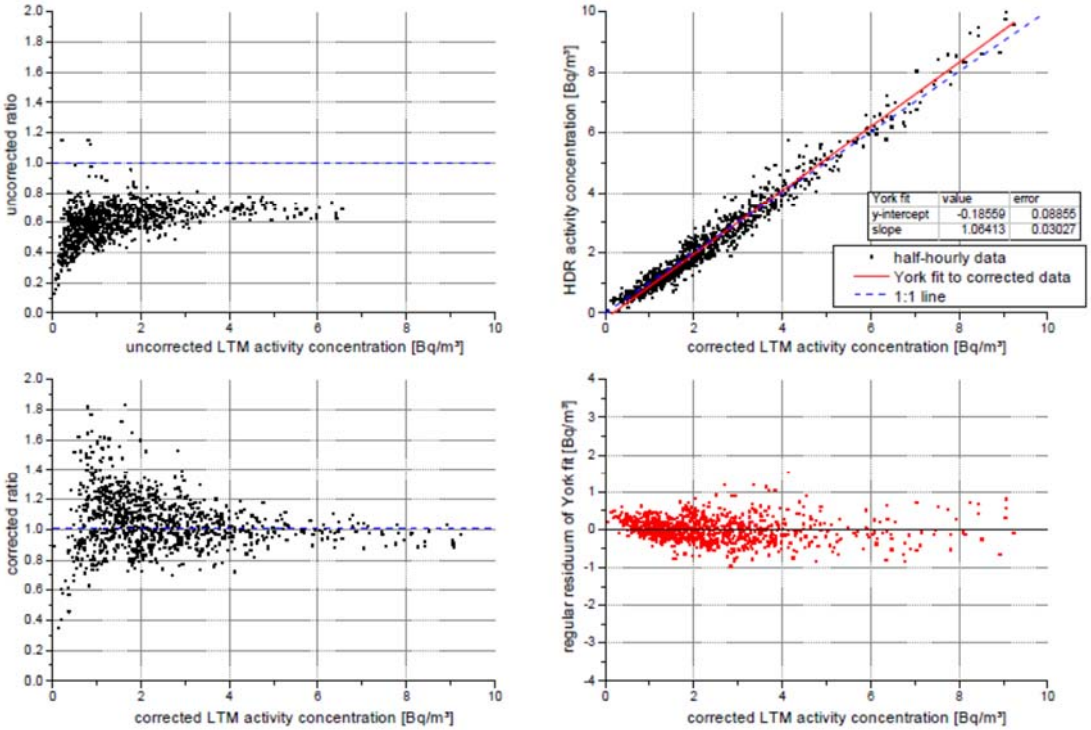


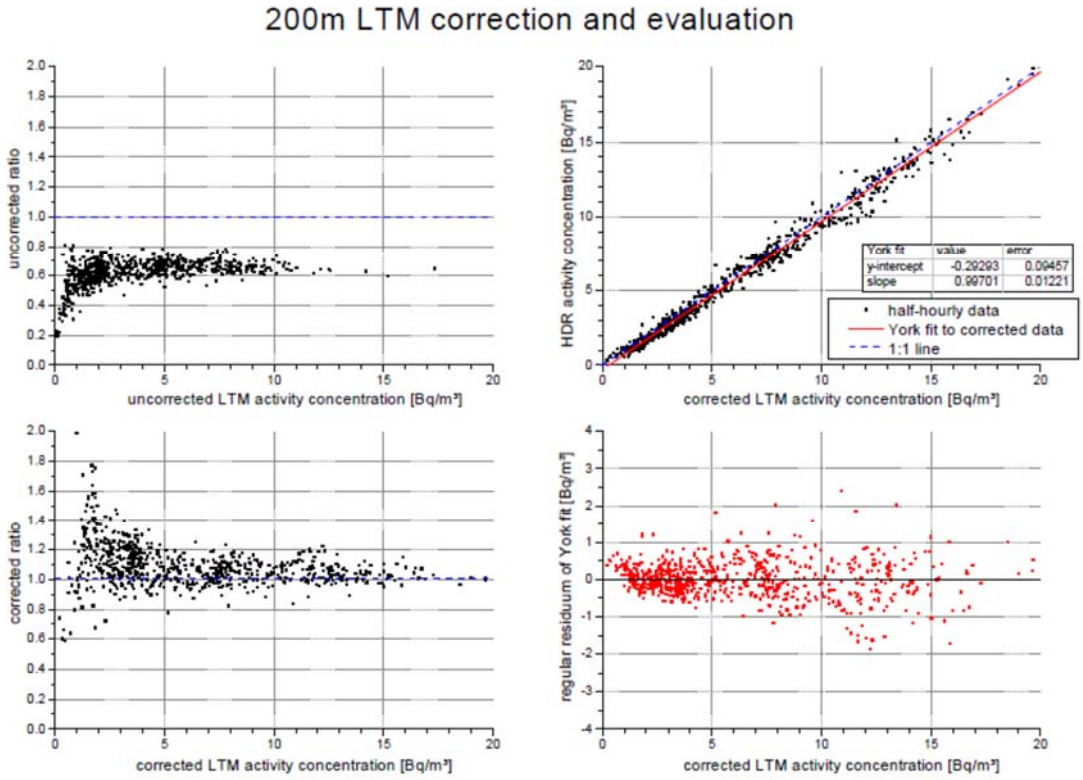







130m LTM correction and evaluation
uncorrected ratio
uncorrected LTM activity concentration [Bq/m³]
HDR activity concentration [Bq/m³]
corrected LTM activity concentration [Bq/m³]
York fit | value | error
y-intercept | -0.05161 | 0.11457
slope | 1.01939 | 0.03817
half-houly data
York fit to corrected data
1:1 line
corrected ratio
corrected LTM activity concentration [Bq/m³]
regular residuum of York fit [Bq/m³]
corrected LTM activity concentration [Bq/m³]


152m LTM correction and evaluation
uncorrected ratio
uncorrected LTM activity concentration [Bq/m³]
HDR activity concentration [Bq/m³]
corrected LTM activity concentration [Bq/m³]
York fit | value | error
y-intercept | -0.18559 | 0.08855
slope | 1.06413 | 0.03027
half-hourly data
York fit to corrected data
1:1 line
corrected ratio
corrected LTM activity concentration [Bq/m³]
regular residuum of York fit [Bq/m³]
corrected LTM activity concentration [Bq/m³]


200m LTM correction and evaluation
uncorrected ratio
uncorrected LTM activity concentration [Bq/m³]
HDR activity concentration [Bq/m³]
corrected LTM activity concentration [Bq/m³]
York fit | value | error
y-intercept | -0.29293 | 0.09457
slope | 0.99701 | 0.01221
half-hourly data
York fit to corrected data
1:1 line
corrected ratio
corrected LTM activity concentration [Bq/m³]
regular residuum of York fit [Bq/m³]
corrected LTM activity concentration [Bq/m³]