

OZONE analyzerYZER INTERCOMPARISON
 Thermo 49i 1214911088

Intercomparison place : Bologna
 Intercomparison operator: Francescopiero Calzolari
 Transfer Standard: Thermo 49iPs s/n: 1404860524
 Transfer Standard has been evaluated by ENPA on 1900-01-01 with SRP#15 giving slope of 1.000 and intercept of -0.3
 TS has been warmed-up for more then 12 hours and OA has been conditioning at 200ppb for more then 2 hour
 OA has been evaluated at the following 5 concentration levels: 0, 25, 50, 75, 100 e 125 ppb

OA and TS condition:
 OA 1214911088 BKG=0.0 ; Coeff=1.000
 TS 1404860524 BKG=-0.3 ; Coeff=1.000

Intercomparison start : 2022-05-04 07:59:00 ;
 Intercomparison end : 2022-05-04 15:50:00

risultati regressione lineare $O_{Amean} = T_{Smean} \cdot slope + intercept$:
 TS Transfer Standard
 OA O3 Analyzer

slope = 0.983899 slope_stderr = 1.036e-03
 intercept = -0.490884 intercept_stderr = 8.671e-02
 rsquare = 0.999979 covariance = -1.247e-20

TSmean : media [O3] TS ogni step di calibrazione
 OAmean : media [O3] OA per ogni step di calibrazione.
 predicted = (OAmean - intercept)/slope
 TSstd : standard deviation [O3] TS per ogni step di calibrazione
 OAstnd : standard deviation [O3] OA per ogni step di calibrazione
 Residual = TSmean - predicted
 Deviation = OAmean - TSmean

TSmean	TSstd	OAmean	OAstnd	predicted	residual	deviation
0.351	0.112	0.107	1.355	0.608	-0.257	-0.244
75.032	0.075	73.536	1.279	75.239	-0.207	-1.495
150.038	0.119	146.999	1.040	149.904	0.134	-3.039
125.004	0.124	122.854	1.161	125.363	-0.359	-2.151
25.028	0.073	23.540	1.092	24.424	0.603	-1.488
100.009	0.094	97.798	1.255	99.897	0.112	-2.211
80.000	0.076	78.041	0.971	79.817	0.182	-1.958
49.988	0.090	48.646	1.031	49.941	0.047	-1.342
15.016	0.103	14.240	0.968	14.972	0.044	-0.776
100.038	0.089	98.022	1.121	100.126	-0.087	-2.016
149.992	0.152	147.253	0.952	150.161	-0.169	-2.739
0.352	0.105	0.225	0.982	0.728	-0.377	-0.126
50.032	0.073	48.870	0.835	50.169	-0.137	-1.162
24.999	0.114	23.813	1.135	24.702	0.298	-1.186
100.017	0.099	97.800	1.109	99.900	0.117	-2.216
125.013	0.115	122.415	0.732	124.918	0.096	-2.598
14.973	0.115	14.393	0.916	15.128	-0.154	-0.580
75.000	0.089	73.349	0.764	75.048	-0.048	-1.651
99.991	0.122	97.801	0.782	99.900	0.091	-2.191
79.965	0.092	78.147	0.341	79.925	0.040	-1.818
0.280	0.115	-0.245	0.585	0.250	0.030	-0.525

Unoise : media OAstd	= 0.972
Ulinearity : standard deviation Residual	= 0.225
Urepeat = sqrt(Unoise^2 + Ulinearity^2)	= 0.997
Udrift = sqrt(0.58^2+(0.0025*C)^2)	= 0.735
U = sqrt(Urepeat^2+Udrift^2)	= 1.239
C	= 100.0

compensation equation to obtain unbiased concentration
[O3unbiased]=([OA]+0.786)/0.984)

New OA coefficients
slope=1.016
bkg=0.799

Intercomparison 49i s/n 1214911088 date : 20220504

