

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 15:53:00 ;
 Intercomparison end : 2022-05-05 06:00:00

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

slope = 0.986944 slope_stderr = 9.536e-04
 intercept = -0.510674 intercept_stderr = 8.175e-02
 rsquare = 0.999983 covariance = -5.459e-21

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
 OAstD : standard deviation [O3] OA per ogni step di calibrazione
 Residual = TSmean - predicted
 Deviation = OAmean - TSmean

TSmean	TSstd	OAmean	OAstD	predicted	residual	deviation
75.013	0.078	73.916	0.334	75.412	-0.399	-1.097
149.991	0.065	147.886	0.513	150.360	-0.369	-2.104
125.031	0.076	123.171	0.504	125.317	-0.286	-1.860
24.960	0.072	24.257	0.417	25.095	-0.135	-0.703
100.028	0.125	98.151	0.320	99.967	0.061	-1.877
79.993	0.087	78.392	0.430	79.947	0.047	-1.601
49.998	0.085	48.713	0.407	49.875	0.123	-1.285
14.987	0.117	14.294	0.680	15.000	-0.013	-0.694
100.020	0.130	97.940	0.432	99.753	0.267	-2.080
149.987	0.072	147.290	0.465	149.756	0.231	-2.697
0.318	0.085	-0.207	0.404	0.308	0.010	-0.525
49.985	0.136	48.695	0.323	49.857	0.129	-1.290
24.985	0.083	24.137	0.421	24.974	0.011	-0.848
99.995	0.087	97.942	0.316	99.755	0.240	-2.053
125.023	0.096	122.726	0.538	124.867	0.156	-2.297
14.996	0.105	14.136	0.315	14.840	0.155	-0.860
74.993	0.122	73.451	0.319	74.940	0.053	-1.542
99.988	0.073	98.118	0.396	99.933	0.055	-1.870
79.962	0.087	78.588	0.364	80.145	-0.183	-1.374
0.233	0.104	-0.130	0.555	0.386	-0.153	-0.363

Unoise : media OAstD = 0.423

Ulinearity : standard deviation Residual = 0.196
Urepeat = sqrt(Unoise^2 + Ulinearity^2) = 0.466
Udrift = sqrt(0.58^2+(0.0025*C)^2) = 0.735
U = sqrt(Urepeat^2+Udrift^2) = 0.870
C = 100.0

compensation equation to obtain unbiased concentration
[O3unbiased]=[OA]+0.807/0.987)

New OA coefficients
slope=1.013
bkg=0.817

Intercomparison 49i s/n 1214911088 date : 20220505

