

DISPERSION TEST RESULTS WITH MULTIPLE GEOMETRIES AT RBCC-E campaign AROSA 2014

ENV59 ATMOZ Traceability for atmospheric total column ozone

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Two different devices were tested:

GLOBAL PORT, use the UV port as for input as the UV global measurements.

Used routinely by IOS & RBCC-E

DIRECT PORT, use the quartz window for input as Ozone measurements

Used routinely by EC and K&Z.

The dispersion is performed using the HG lines and Cd lines, the internal HG lamp is routinely used, on this test we use the external lamp and the internal lamp to check differences.

- Seven Brewer participate on the campaign, and we test 4 different combinations for every brewer. In addition we add the data from Ilias Fountoulakis from brewer 086.
- We show the ozone absorption coefficient determined by the **quadratic** polynomial using only ozone range lines is taking to account on the analysis. (280-340)

The error on the dispersion procedure is estimated as 1 step, a mean value of +/- 1.1E-3 on the ozone absorption coefficient is applied to obtain the error bars.



The observations can be accessed on the [campaign logs](#).

configs_AROSA2014 ☆ ■

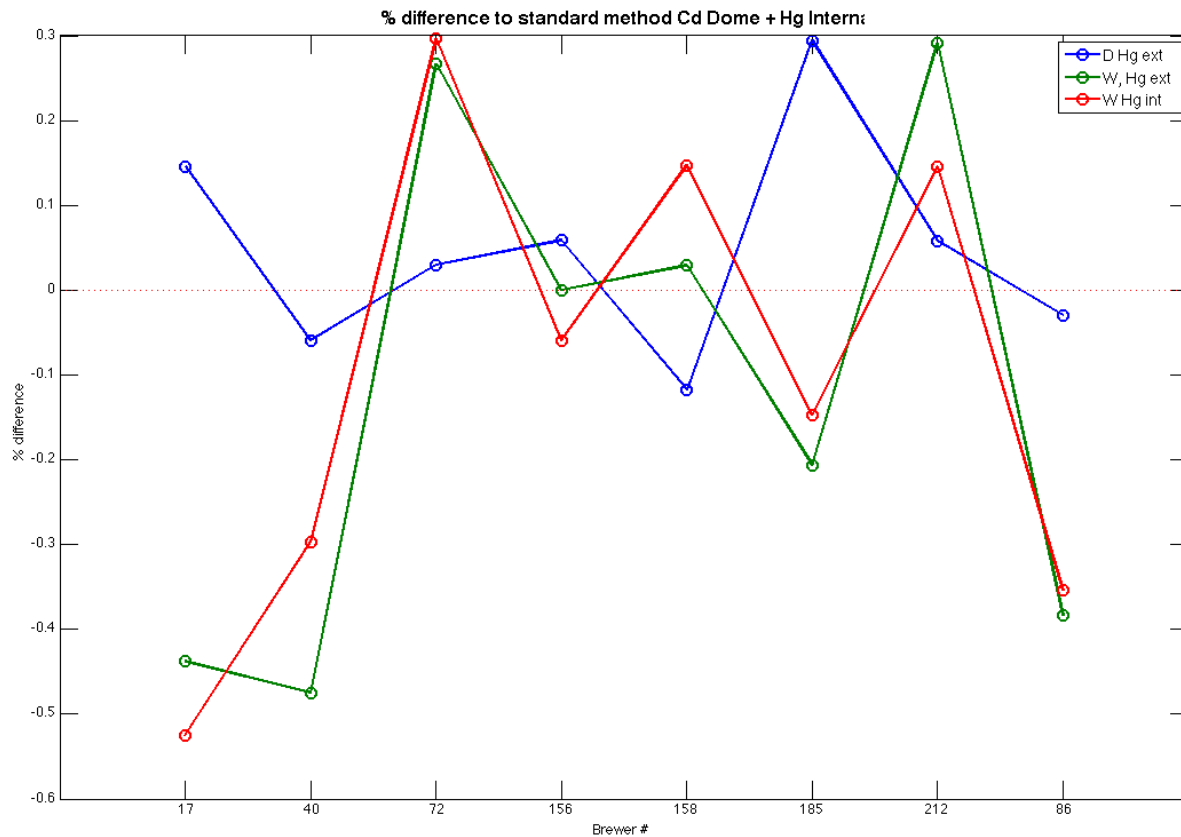
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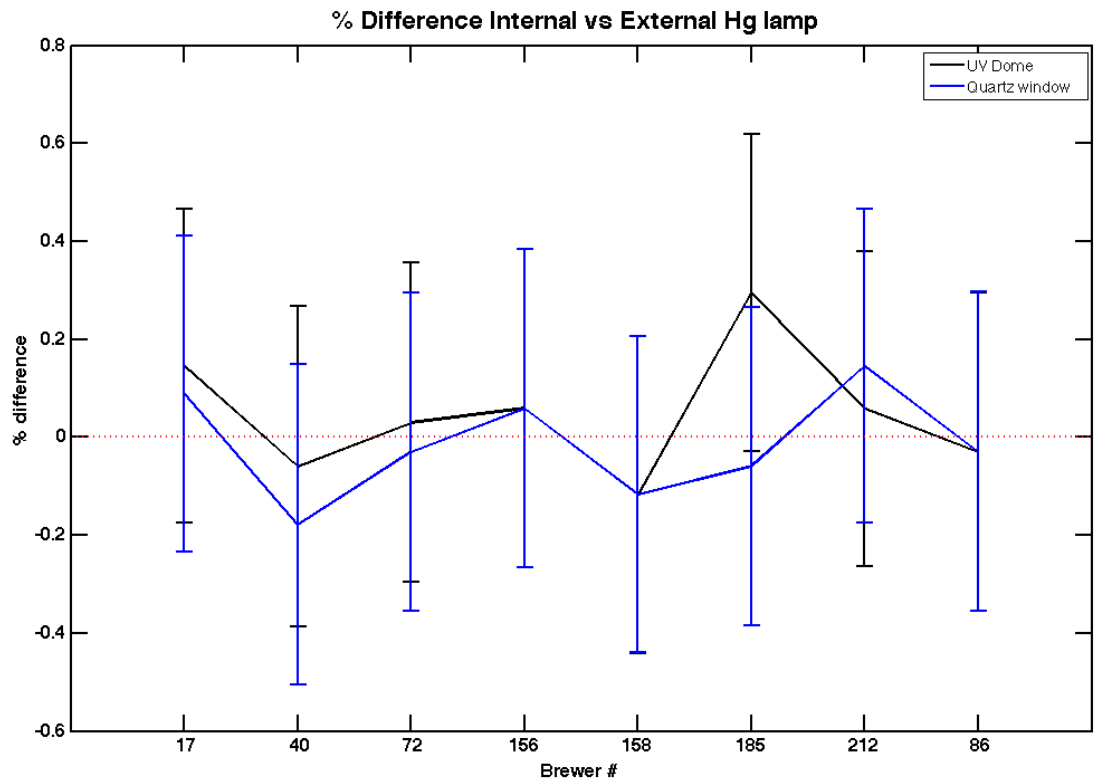
Brewer#

A	B	C	D	E	F	G	H	I	J	K	L	M	N
Brewer#	HG (int.)	HG (ext.)	CD	Corr. steps Hg	ZN	Corr. steps Hg	Meas.				Comentarios		
							D, Hg ext	W, Hg ext	W, Hg int	D, Hg int			
17	203	200 - D	202 - W	199 - D RENAMED to 200	200 - W RENAMED to 202	ok			0.3432	0.3412	0.3409	0.3427	017_14_200 (D, Hg ext) 017_14_201 (D, Hg int) 017_14_202 (W, Hg ext) 017_14_203 (W, Hg int)
40	203	202 - D RENAMED to 200	202 - W	200 - D	202 - W	ok			0.3366	0.3352	0.3358	0.3368	040_14_200 (D, Hg ext) 040_14_201 (D, Hg int) 040_14_202 (W, Hg ext) 040_14_203 (W, Hg int)
72	203 RENAMED to 201	199 - D RENAMED to 200	205 - W RENAMED to 202	200 - D	202 - W	ok			0.3373	0.3381	0.3382	0.3372	072_14_200 (D, Hg ext) 072_14_201 (D, Hg int) 072_14_202 (W, Hg ext) 072_14_203 (W, Hg int)
156	202	199 - D	200 - W	199 - D	202 - W	ok			0.3392	0.339	0.3388	0.339	156_14_199 (D, Hg ext) 156_14_200 (W, Hg ext) 156_14_201 (W, Hg ext) 156_14_202 (W, Hg ext)
158	203	200 - D	199 - W	200 - D	199 - W	ok			0.3399	0.3404	0.3408	0.3403	158_14_199 (W, Hg ext) 158_14_200 (D, Hg ext) 158_14_201 (W, Hg int) 158_14_202 (D, Hg int)
185	205	199 - D	204 - W	199 - D	204 - W	ok			0.3405	0.3388	0.339	0.3395	185_14_199 (D, Hg ext) 185_14_200 (D, Hg int) 185_14_204 (W, Hg ext) 185_14_205 (W, Hg int)
212	202	199 - D	200 - W	199 - D	200 - W	ok			0.3428	0.3436	0.3431, 0.3436 (Davos)	0.3426	212_14_189 (D, Hg ext) 212_14_200 (W, Hg ext) 212_14_201 (W, Hg int) 212_14_202 (D, Hg int) 212_14_189 (W, Hg int, Dav)
..eyenda	DSP hecho / done	DSP haciendose / in progress	DSP pendiente / to be done	DSP revisar/repit / repeat	W - window	D - Dome							

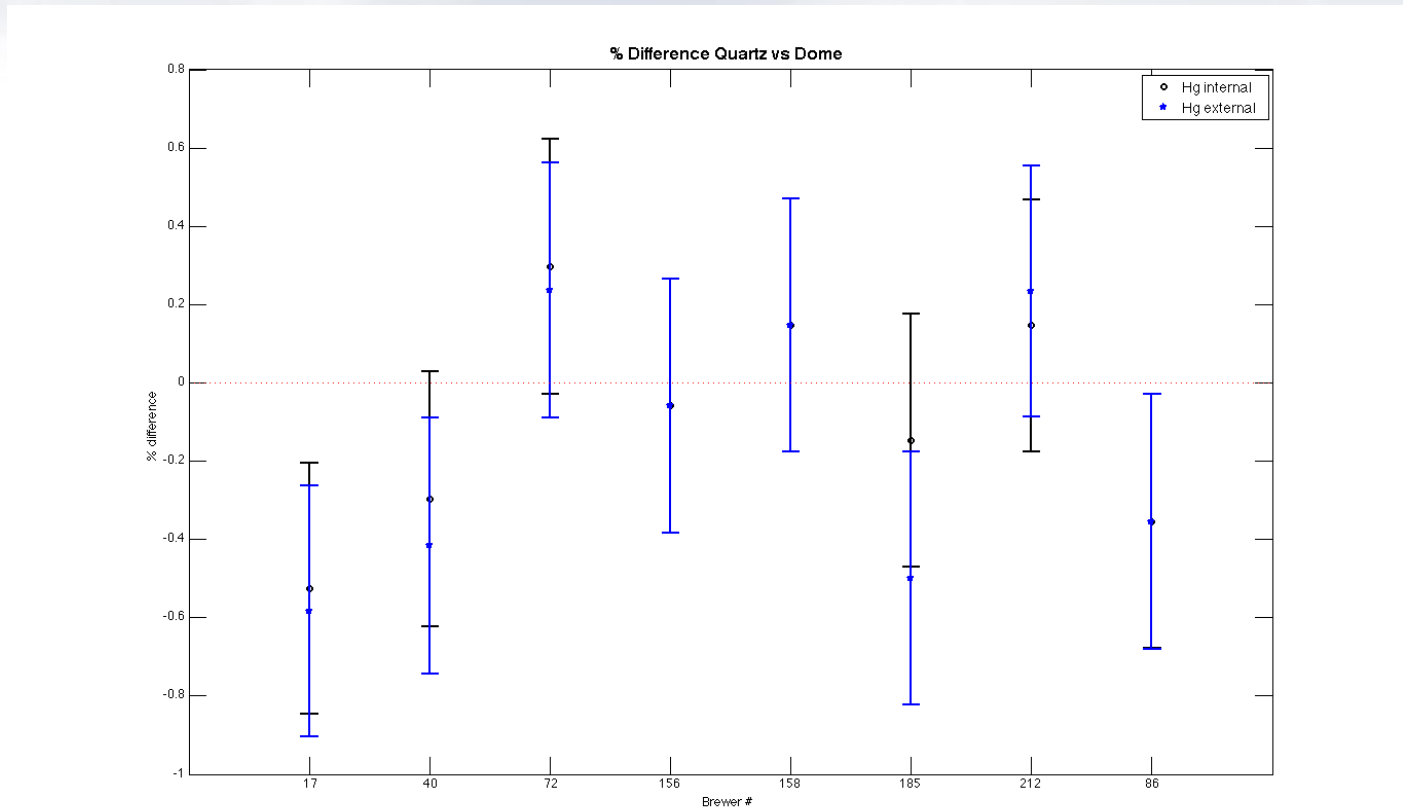
Comparison with the RBCC-E/IOS method : Internal HG, Cd lamp on GLOBAL PORT



Internal HG lamp vs External HG lamp



Direct vs Global port



Conclusions:

- We don't find at AROSA and Thessaloniki differences on ozone absorption coefficient calculation between the use of the internal Hg lamp and the External.
- On brewers 017, 040 and 086 the ozone absorption calculation is **0.5% lower** when is calculated with the Direct Port compared with the Global port.