



Supplement of

On the capability of the future ALTIUS ultraviolet–visible–near-infrared limb sounder to constrain modelled stratospheric ozone

Quentin Errera et al.

Correspondence to: Quentin Errera (quentin.errera@aeronomie.be)

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Table S1 and S2 provide signal-to-noise ratio (SNR) requirements specified for ALTIUS bright limb and stellar occultation, respectively. They are reproduced from the ESA report ALT-RS-ESA-SY-0003. For solar occultations, no SNR requirement were established and stellar occultation SNR were used in the simulation of ALTIUS profiles.

Table S1. Requirements of level 1 signal-to-noise ratio for ALTIUS bright-limb measurements.

Altitude (km)	wavelength(nm)														
	250	300	350	400	450	500	550	600	650	700	800	1000	1200	1400	1600
5	1	55	1120	1160	5660	3940	2210	1400	1170	908	831	2030	3220	4420	5610
10	1	55	1130	1160	4790	3290	1800	1090	913	707	631	1480	2330	3170	4020
15	1	56	1130	1150	4060	2760	1470	850	711	551	479	1080	1680	2280	2880
20	1	58	1100	1070	3430	2310	1200	662	554	429	365	791	1220	1640	2070
25	1	59	971	862	2910	1940	978	516	431	334	278	579	880	1180	1480
30	2	61	765	640	2460	1630	801	402	336	260	212	425	638	850	1060
35	2	64	568	462	2080	1370	657	313	262	203	162	312	462	612	762
40	2	67	407	325	1760	1150	540	244	204	158	124	230	335	441	547
45	2	73	291	229	1490	968	445	190	159	123	95	169	244	318	392
50	2	78	208	161	1260	814	366	148	124	96	73	125	177	229	281
55	2	65	147	111	1070	685	302	115	96	75	56	92	129	165	202
60	2	44	99	72	904	577	250	90	75	58	43	68	94	119	145
65	3	26	62	44	765	486	207	70	58	45	33	51	68	86	104
70	2	14	36	24	648	410	172	54	45	35	25	38	50	62	75
75	1	7	18	12	548	345	142	42	35	27	20	28	37	45	54
80	0	3	9	5	464	291	118	33	28	21	15	21	27	33	38
85	0	1	4	2	393	246	99	26	22	17	12	16	20	24	28
90	0	0	1	1	332	207	82	20	17	13	9	12	14	17	20

Table S2. Requirements of level 1 signal-to-noise ratio for ALTIUS stellar occultation measurements.

Altitude (km)	wavelength(nm)									
	250	259	280	300	325	350	448	550	600	650
5	1	1	1	1	1	1	14	69	81	111
10	1	1	1	1	1	2	73	112	107	120
15	1	1	1	1	1	42	139	131	118	120
20	1	1	1	1	12	133	139	134	126	120
25	1	1	1	1	54	144	139	134	126	120
30	1	1	1	1	125	144	139	134	126	120
35	1	1	1	1	144	144	139	134	126	120
40	1	1	1	5	144	144	139	134	126	120
45	1	1	1	85	144	144	139	134	126	120
50	1	1	1	139	144	144	139	134	126	120
55	3	3	53	139	144	144	139	134	126	120
60	53	54	114	139	144	144	139	134	126	120
65	105	108	114	139	144	144	139	134	126	120
70	105	108	114	139	144	144	139	134	126	120
75	105	108	114	139	144	144	139	134	126	120
80	105	108	114	139	144	144	139	134	126	120
85	105	108	114	139	144	144	139	134	126	120

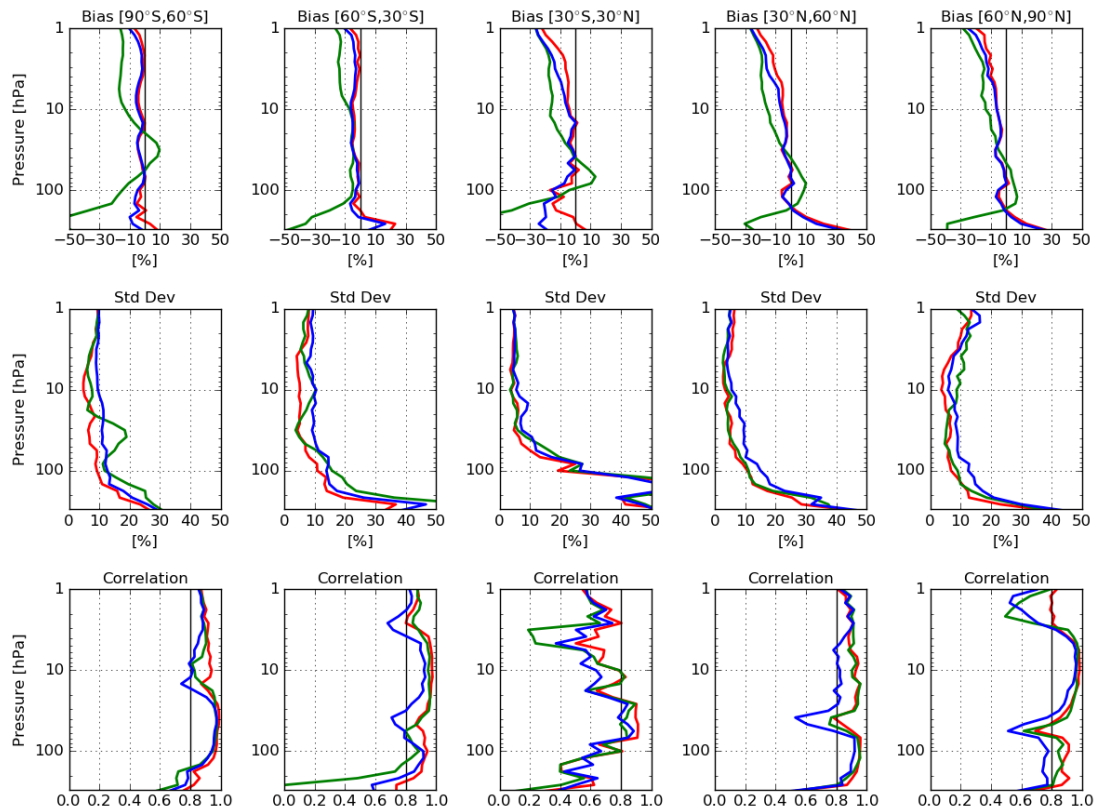


Figure S1. Mean (top row) and standard deviation (middle row) of the differences between BASCOE experiments and ACE-FTS observations ($100 \times [\text{BASCOE} - \text{ACEFTS}] / \text{BASCOE}$), and the correlation between BASCOE and ACE-FTS (bottom row) for the period 15 June-25 October 2009 and in five latitude bands from southern (left) to northern (right) atmospheric regions. BASCOE experiments are NR (red), CR (green) and AR (blue).

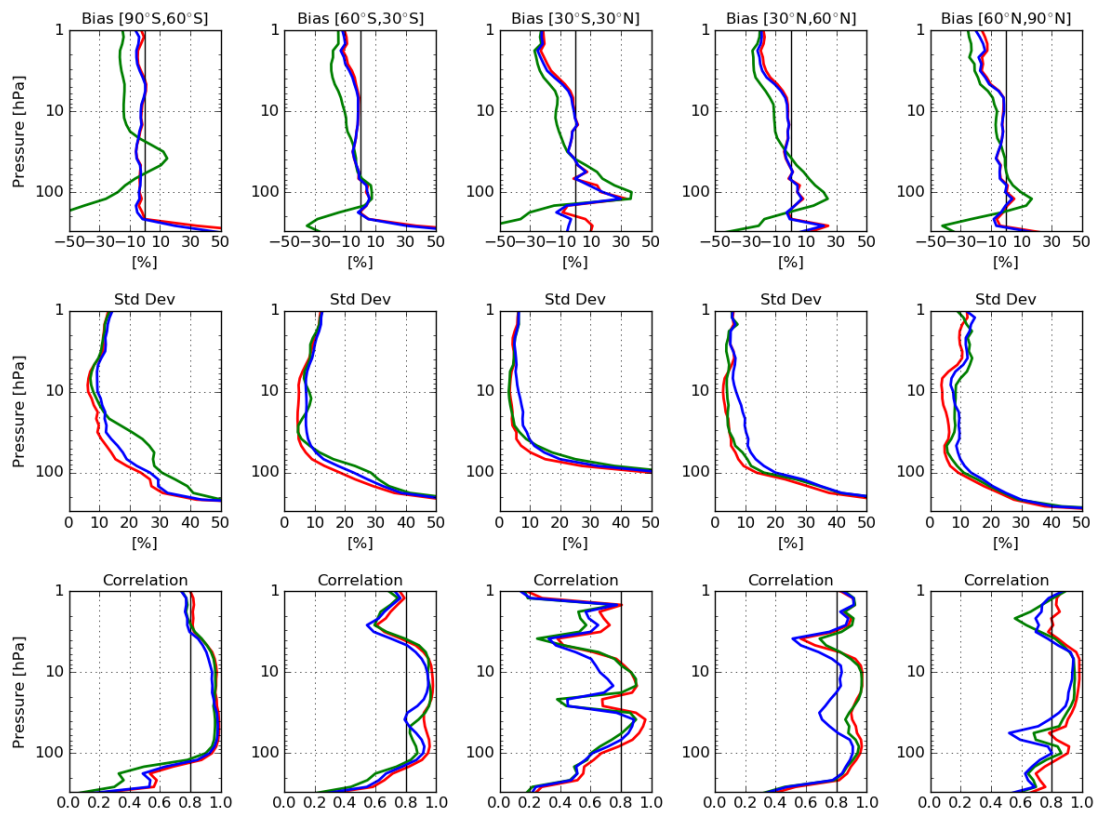


Figure S2. As Fig. S1 but using MIPAS observations.