



Supplement of

Validation of Aeolus wind profiles using ground-based lidar and radiosonde observations at Réunion island and the Observatoire de Haute-Provence

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Baseline	Date	RS Distance (km)	RS Bias (m/s)	RS SD (m/s)	Aeolus overpass time	Lidar Distance (km)	Lidar Bias (m/s)	Lidar SD (m/s)	Aeolus orbit type
2B11	2019-09-25	x	x	x	01h53:52	107.7	3.06	6.52	Desc
2B11	2019-09-25	38	0.55	3.49	14h34:52	46.2	-1.05	4.35	Asc
2B11	2019-09-26	219.5	1.01	4.21	02h06:40	x	x	x	Desc
2B11	2019-10-02	43	-2.31	2.2	14h34:28	29.4	0.47	4.69	Asc
2B11	2019-10-03	201.3	-1.2	4.2	02h06:04	206	-0.27	4.63	Desc
2B11	2019-10-09	22.7	-1.1	4.11	14h34:52	22.6	-2.93	4.98	Asc
2B11	2019-10-10	221	0.56	4.04	02h06:40	221.2	3.34	4.04	Desc
2B11	2019-11-13	x	x	x	14h34:04	48.3	0.44	15	Asc
2B11	2020-01-22	38.6	-2.46	9.35	14h34:40	x	x	x	Asc
2B11	2020-02-19	x	x	x	14h34:40	26.20	-3.5	4.77	Asc
2B11	2020-10-28	27.7	-1.96	6.67	14h33:40	28.10	-3.8	7.21	Asc
2B11	2021-01-13	58.3	-2.38	6.71	14h32:52	x	x	x	Asc
2B11	2021-02-24	66.5	0.46	6.82	14h32:40	40.1	-0.68	8.8	Asc
2B12	2021-06-02	33.0	1.9	6.56	14h32:37	26.2	2.12	7.88	Asc
2B12	2021-06-03	224.2	-0.94	5.61	02h04:13	206.9	-0.19	5.91	Desc
2B12	2021-06-09	33.1	2.52	11.21	14h33:01	40.5	2.22	11.54	Asc
2B12	2021-06-10	241.4	1.09	9.34	02h04:49	222.3	0.2	9.99	Desc
2B12	2021-06-16	113.4	2.38	8.96	01h51:13	x	x	x	Desc
2B12	2021-06-16	34.6	1.46	4.96	14h32:01	49.7	0.95	4.85	Asc
2B12	2021-06-17	216.2	0.12	8.47	02h03:37	193.2	-1.83	8.72	Desc
2B12	2021-06-23	118.6	-1.83	6.17	14h29:01	131.4	-0.84	7.45	Asc
2B12	2021-06-24	141.7	0.82	5.24	02h01:01	127.6	1.41	5.57	Desc
2B12	2021-09-29	x	x	x	14h28:25	119.3	-4.28	12.04	Asc
2B12	2021-11-03	x	x	x	14h28:10	122.6	-2.78	7.72	Asc
2B12	2021-12-01	x	x	x	14h23:20	109.9	-1.48	6.1	Asc

Table S1. Overview of AboVE-Maido 1 and 2 complete list of Aeolus overpasses collocated. The cases of single collocations are also included. The distance is calculated over the average position of each instrument. The measurements are from baseline 2B11 and 2B12.

Baseline	Date	RS Distance (km)	RS Bias (m/s)	RS SD (m/s)	Aeolus overpass time	Lidar Distance (km)	Lidar Bias (m/s)	Lidar SD (m/s)	Aeolus orbit type
B02	2019-01-06	168.0	2.52	5.9	17:13:44	149.7	1.04	7.18	Asc
B02	2019-01-07	x	x	x	05:43:32	156.9	3.22	6.85	Desc
B02	2019-01-07	86.2	-2.47	6.29	17:26:44	113.1	-0.14	5.25	Asc
B13	2021-12-06	78.3	-2.70	6.04	17:20:34	118.3	-3.24	10.27	Asc
B13	2021-12-07	76.2	-0.20	6.13	05:50:22	61.3	-6.81	13.93	Desc
B13	2021-12-12	206.8	-5.05	9.11	17:07:58	195.2	-3.62	11.04	Asc
B13	2021-12-13	75.0	-3.35	4.95	17:20:46	94.6	-3.11	5.04	Asc
B13	2021-12-14	58.5	1.50	2.84	05:50:46	65.5	0.47	4.02	Desc
B13	2021-12-20	74.5	-6.56	6.84	17:20:22	77.9	-6.53	7.12	Asc
B13	2021-12-21	61.8	-1.08	4.33	05:49:58	53.9	-1.34	4.50	Desc
B13	2022-01-10	56.4	-1.23	6.94	17:20:34	103.4	0.06	6.29	Asc
B13	2022-01-17	40.4	-5.36	5.22	17:20:22	61.8	-4.50	6.02	Asc
B13	2022-01-24	42.4	0.69	5.59	17:20:10	64.1	0.61	6.03	Asc

Table S2. Overview of AboVE-Maido 1 and 2 complete list of Aeolus overpasses collocated. The cases of single collocations are also included. The distance is calculated over the average position of each instrument. The measurements are from baseline 2B02 and 2B13.