Supplementary material

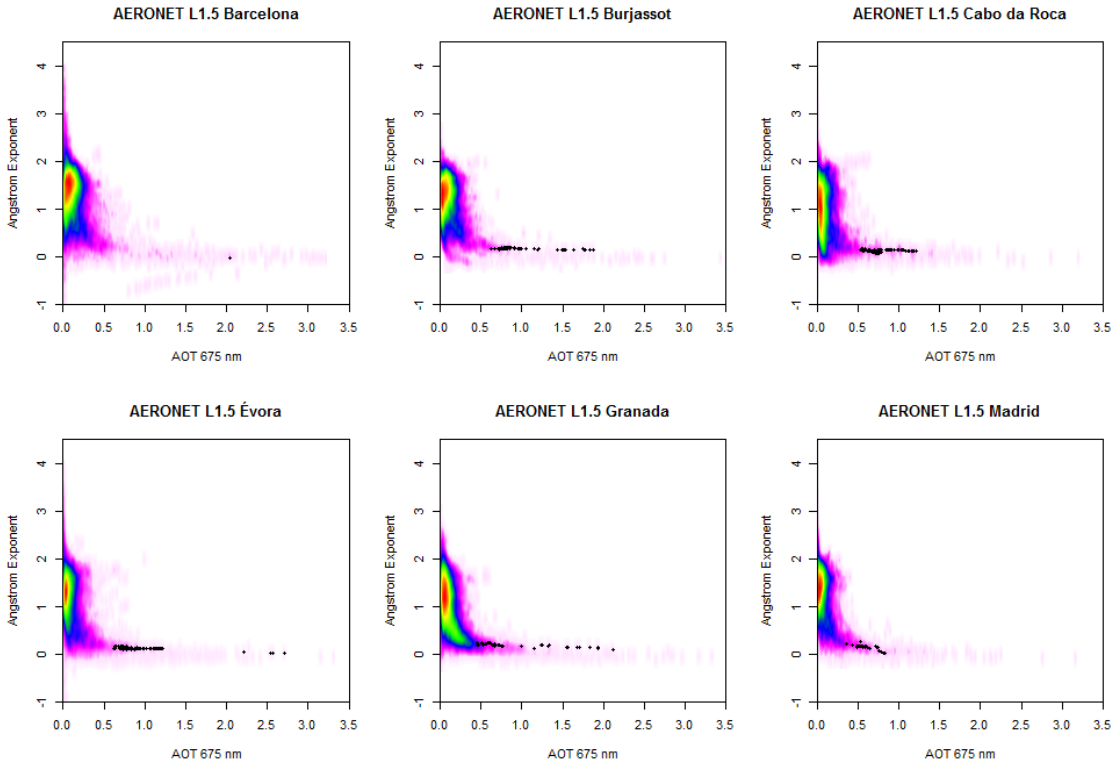


Fig. S1. AE versus AOT for AERONET Level 1.5 datasets. Black dots represent the February 2017 event data points.

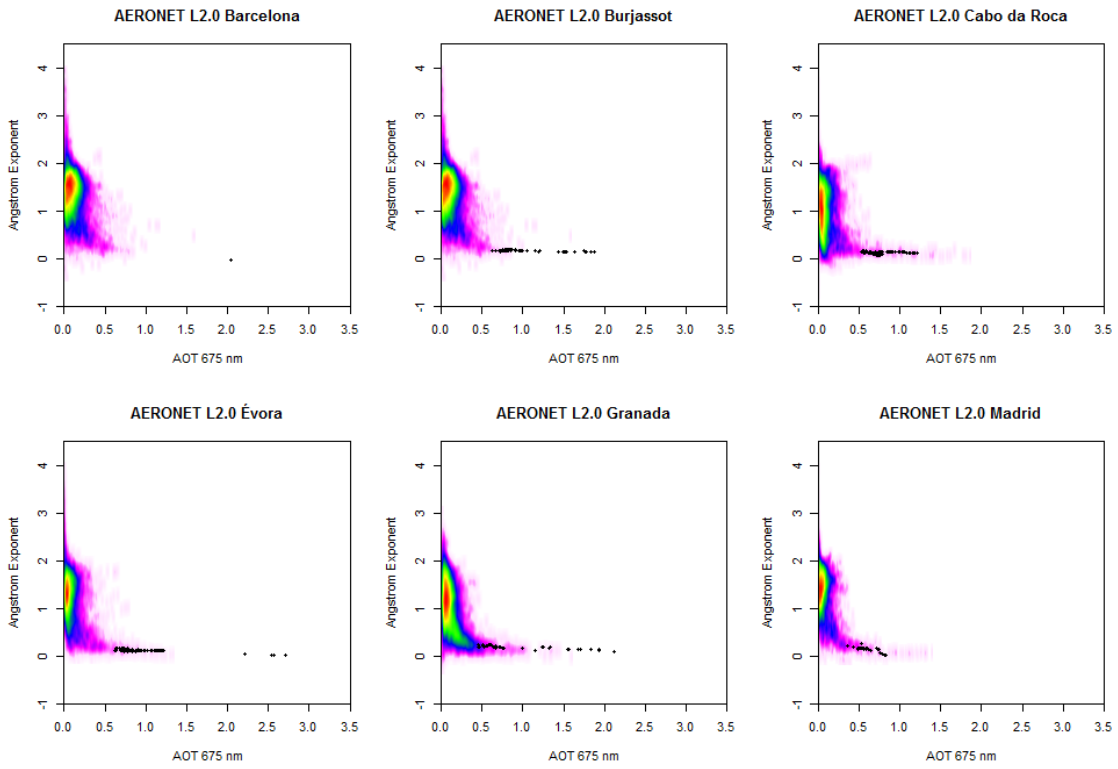
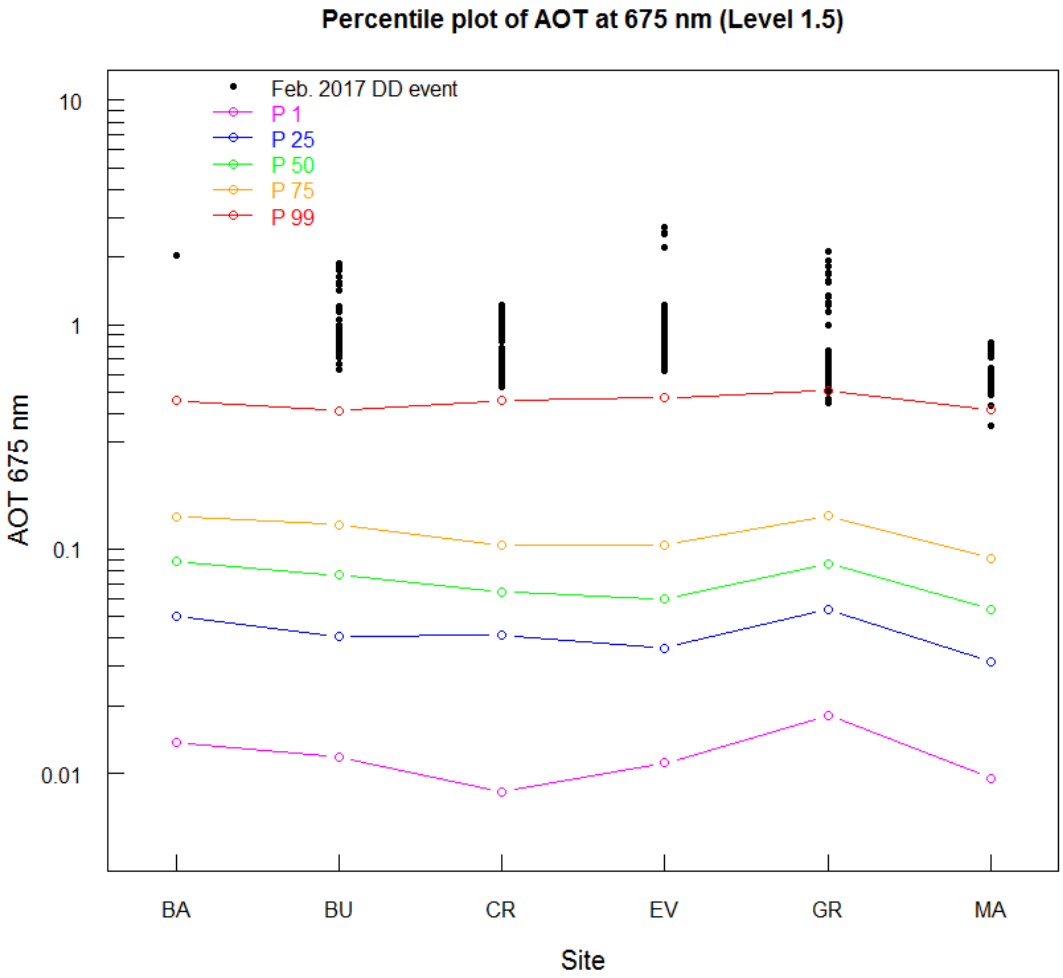


Fig. S2.AE versus AOT for AERONET Level 2.0 datasets. Black dots represent the February 2017 event data points.


Percentile plot of AOT at 675 nm (Level 1.5)
Feb. 2017 DD event
P 1
P 25
P 50
P 75
P 99
10
1
0.1
0.01
AOT 675 nm
BA
BU
CR
EV
GR
MA
Site

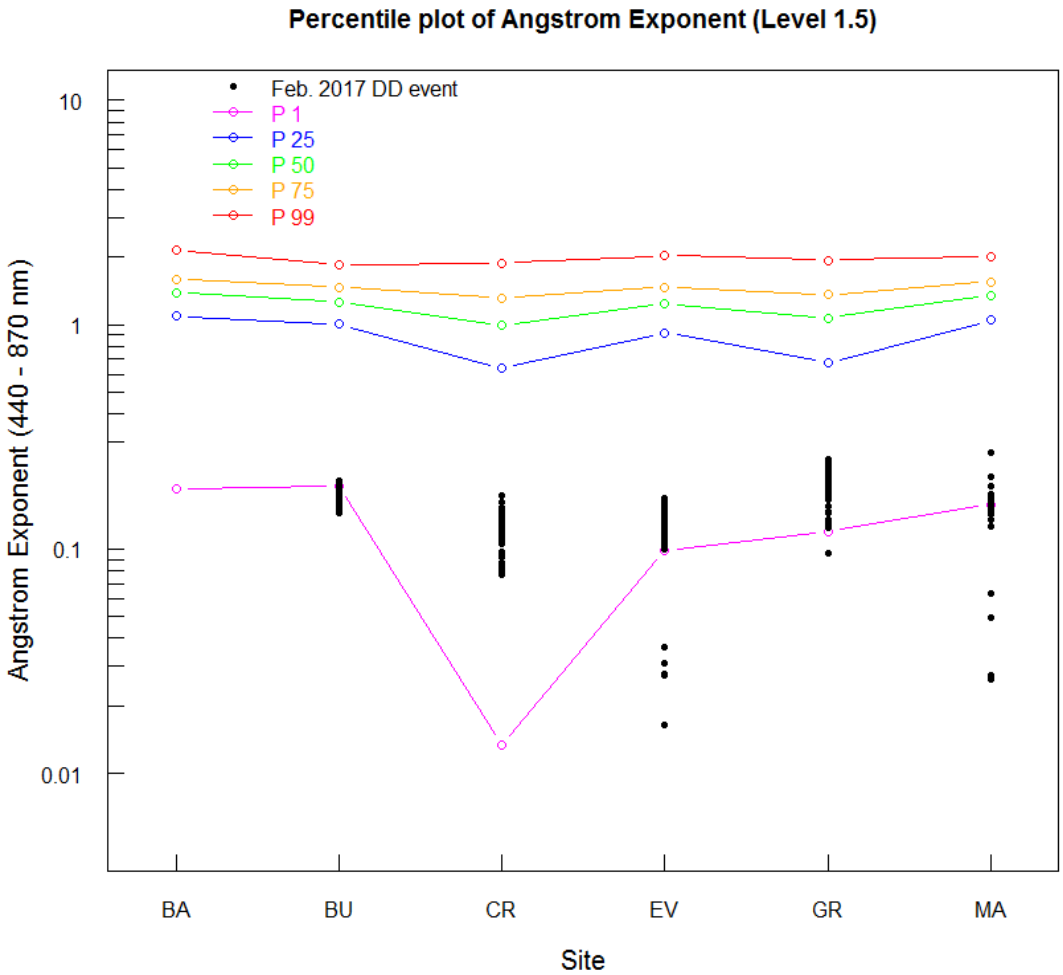


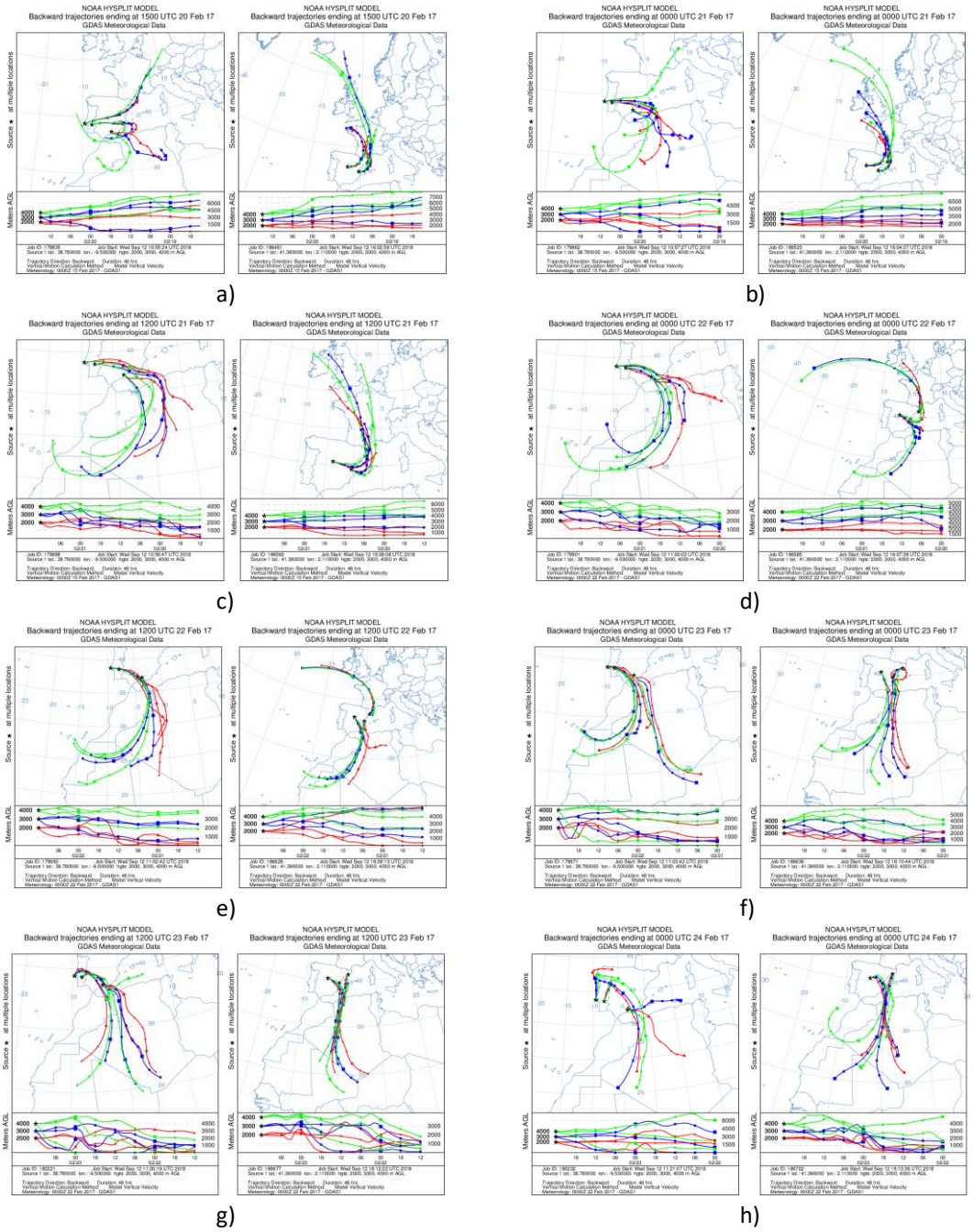
Fig. S3. Percentile plot of AOT at 675 and Angstrom Exponent (440-870 nm) (Level 1.5). Black dots represent the February 2017 event data points.

	Percentiles (AOT 675 nm)						
Sites	P 1	P 5	P 25	P 50	P 75	P 95	P 99
BA	0.014	0.022	0.050	0.088	0.14	0.26	0.46
BU	0.012	0.018	0.041	0.076	0.13	0.25	0.41
CR	0.008	0.020	0.041	0.064	0.10	0.24	0.46
EV	0.011	0.018	0.036	0.060	0.10	0.25	0.47
GR	0.018	0.029	0.054	0.086	0.14	0.30	0.51
MA	0.010	0.016	0.031	0.054	0.091	0.21	0.42

	Percentiles (AE 440 - 870 nm)						
Sites	P 1	P 5	P 25	P 50	P 75	P 95	P 99
BA	0.19	0.51	1.09	1.38	1.59	1.83	2.14

BU	0.19	0.48	1.00	1.26	1.47	1.70	1.84
CR	0.01	0.19	0.64	0.99	1.31	1.66	1.88
EV	0.10	0.32	0.92	1.24	1.47	1.76	2.03
GR	0.12	0.26	0.68	1.07	1.36	1.71	1.93
MA	0.16	0.40	1.05	1.34	1.55	1.82	2.01

Table 1. All AERONET data available at each station (Level 1.5) concerning AOT at 675 and Angstrom Exponent (440-870 nm)



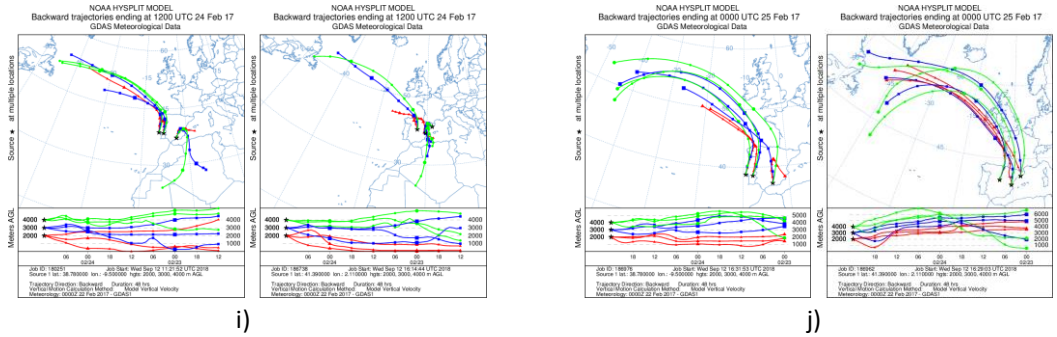


Fig. S4. 48-h air-mass back-trajectories computed using the NOAA HYSPLIT model for three altitudes (2, 3 and 4 km), ending at Cabo da Roca, Évora and Granada (left plot of each panel) and at Barcelona, Burjassot and Madrid (right plot of each panel). The set of back-trajectories shows the air-mass origin at each site from 20 (a) to 24 (j) February 2017.

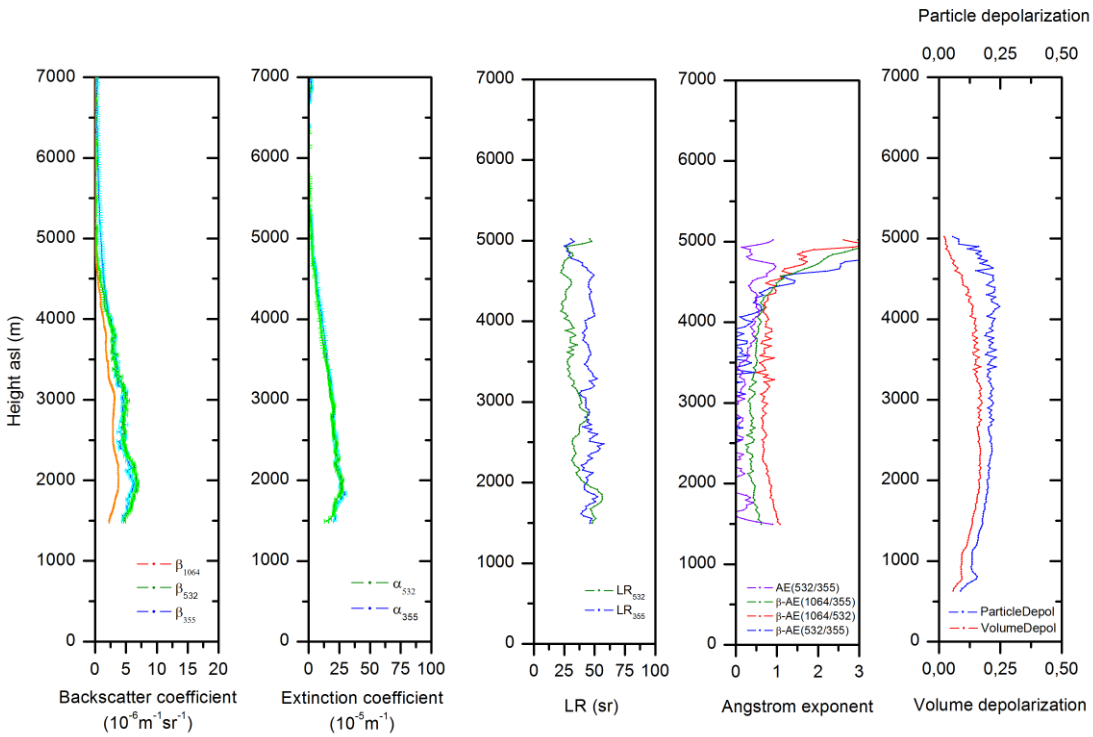


Fig. S5. Backscatter coefficient, extinction coefficient, lidar ratio, Ångström exponents and particle and volume depolarization profiles at 00:00 UTC on 22, February 2017 at Évora.

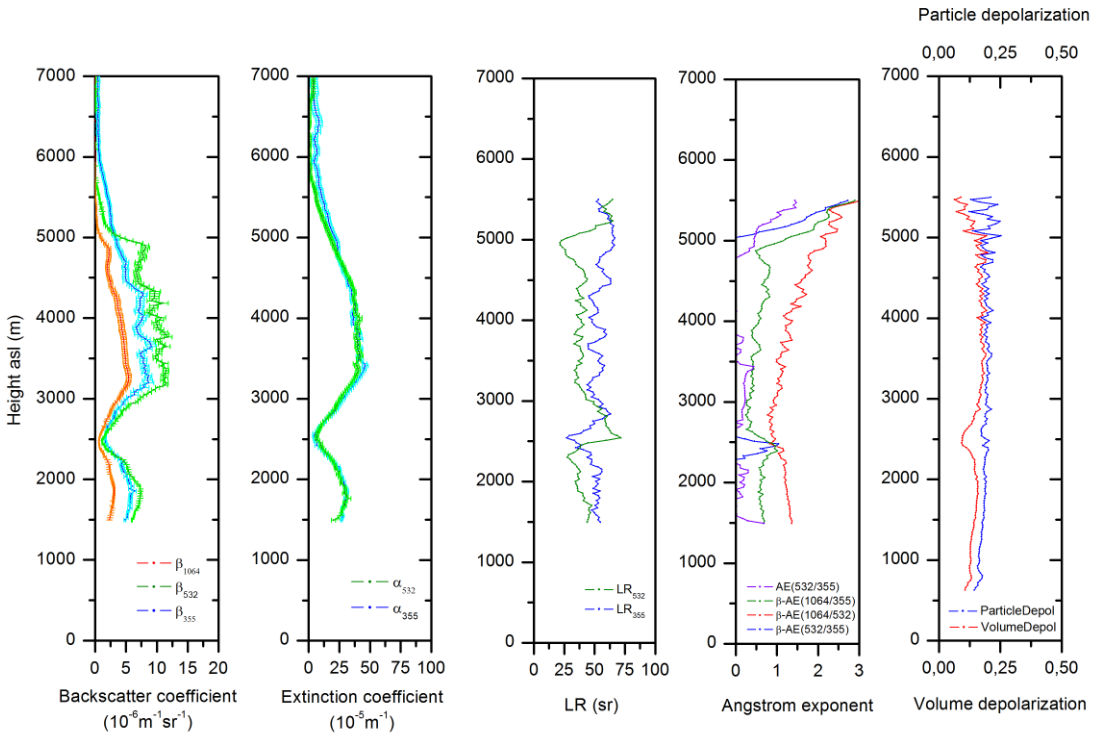


Fig. S6. Backscatter coefficient, extinction coefficient, lidar ratio, Ångström exponents and particle and volume depolarization profiles at 00:00 UTC on 23, February 2017 at Évora.

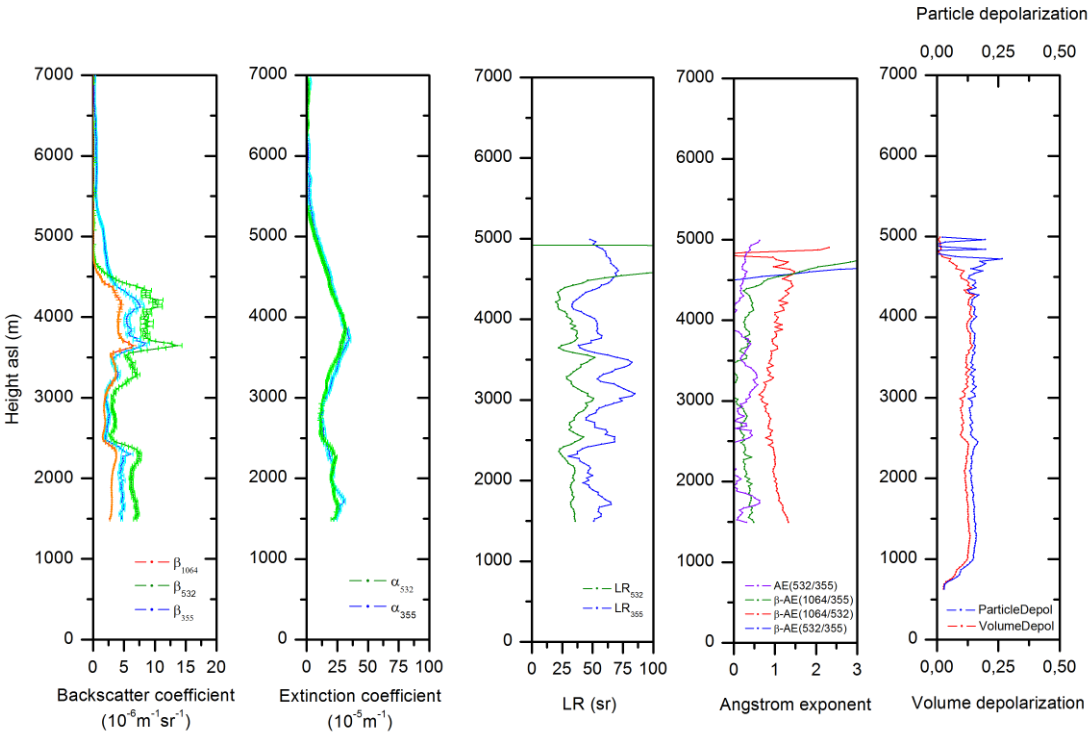


Fig. S7. Backscatter coefficient, extinction coefficient, lidar ratio, Ångström exponents and particle and volume depolarization profiles at 23:29 UTC on 23, February 2017 at Évora.

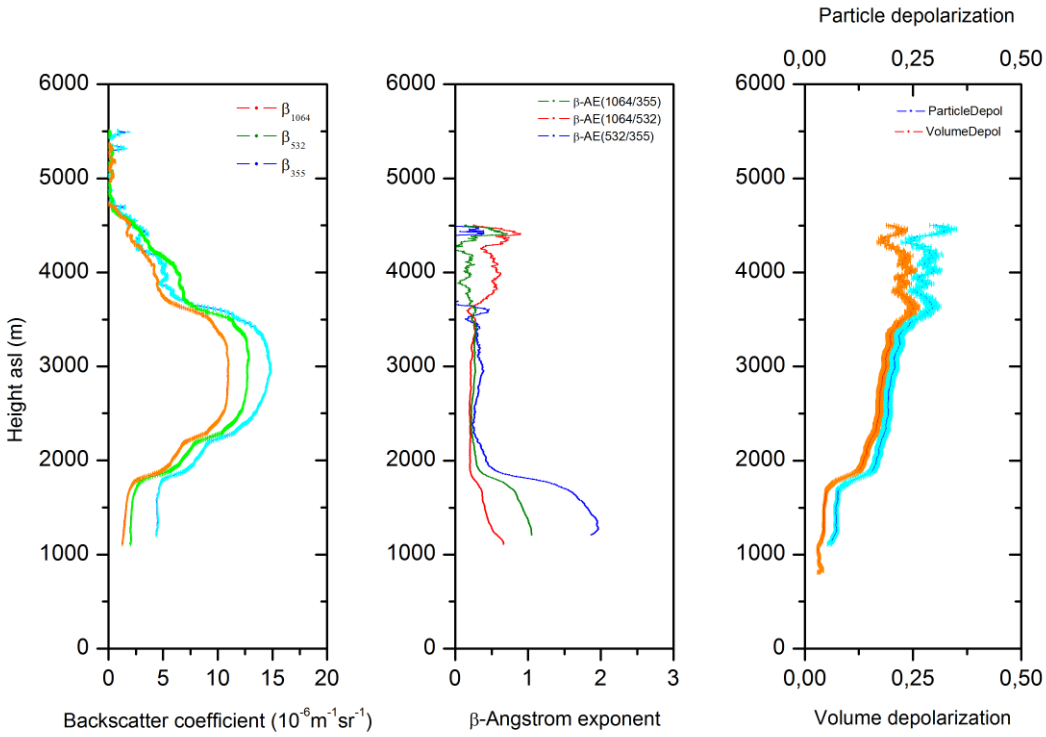


Fig. S8. Backscatter coefficient, β-Ångström exponent, particle and volume depolarization profiles at 13:30 UTC on 20 February 2017 at Granada.

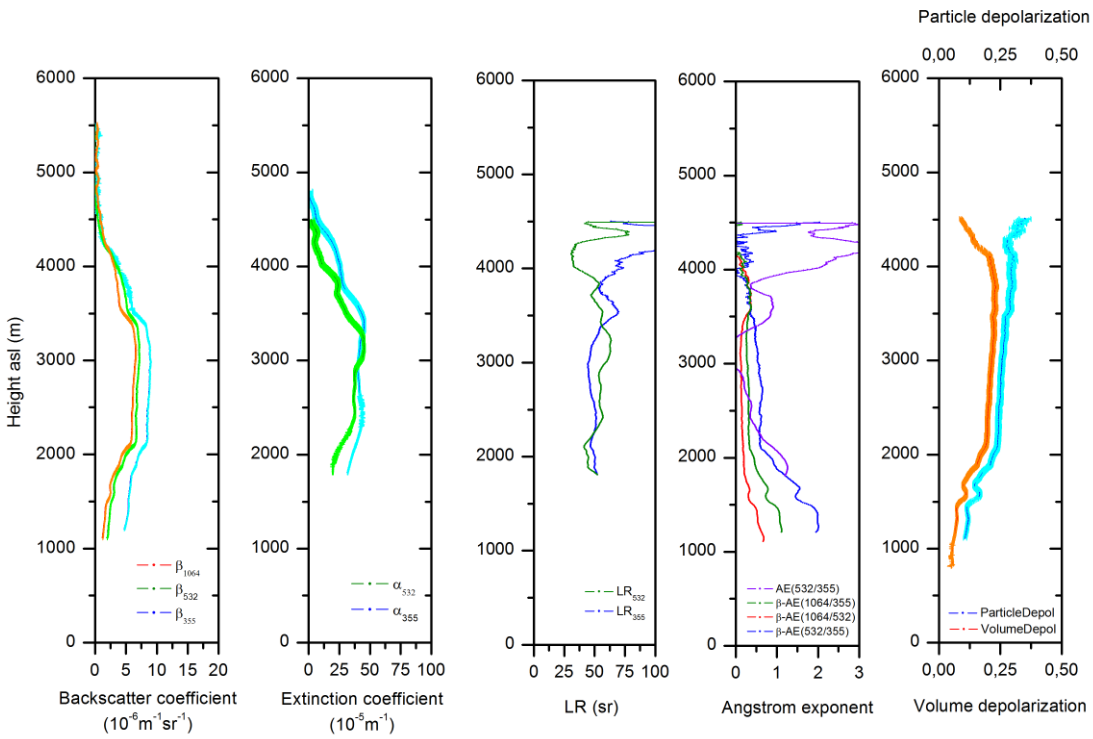


Fig. S9. Backscatter coefficient, extinction coefficient, lidar ratio, Ångström exponents and particle and volume depolarization profiles at 20:00 UTC on 20, February 2017 at Granada.

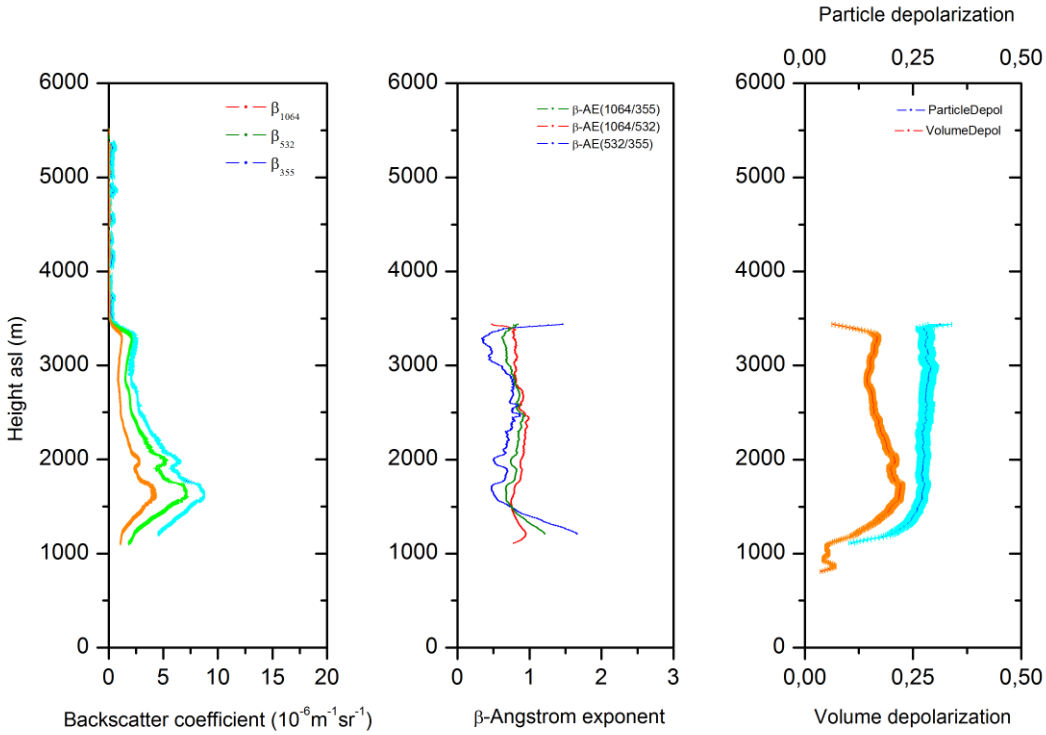


Fig. S10. Backscatter coefficient, β-Ångström exponent, particle and volume depolarization profiles at 07:31 UTC on 21 February 2017 at Granada.

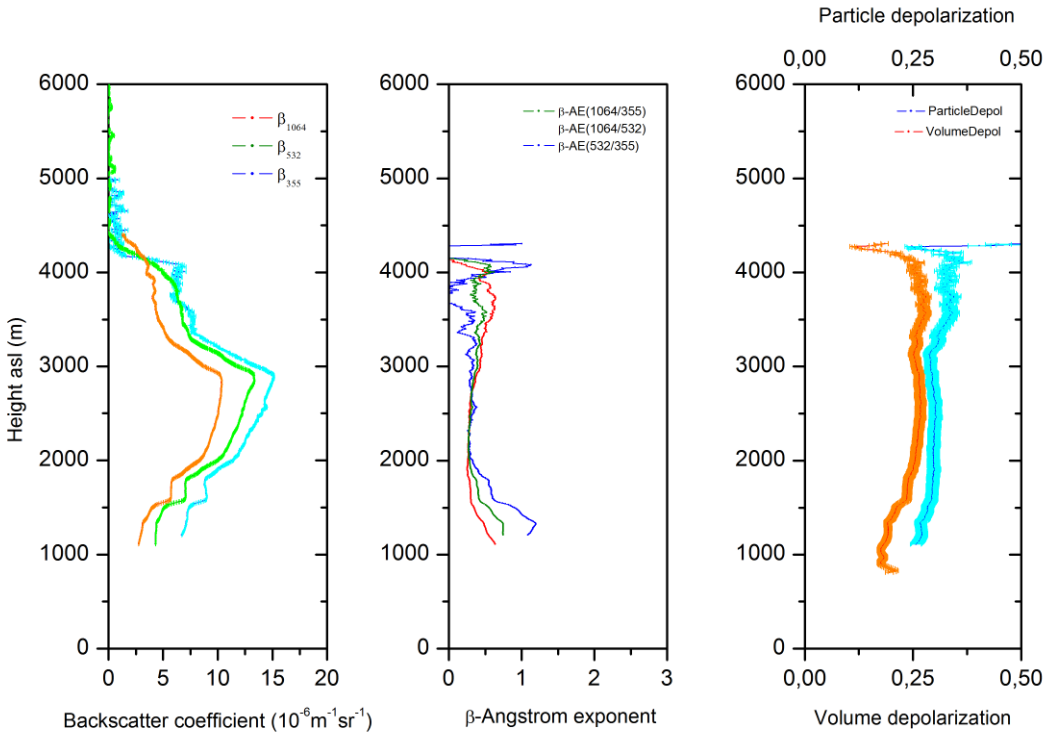


Fig. S11. Backscatter coefficient, β-Ångström exponent, particle and volume depolarization profiles at 12:30 UTC on 22 February 2017 at Granada.