Table S1: Summary of shrinkage events showing the starting time, considered as the moment of first detection of a decrease in size, the final time, shrinking rate (SR) and geometric mean diameters at the beginning and end of the process. It is noted that on some days more than one shrinkage process is observed and all SR are shown.

Figure S1: Location of the stations and sounding setting used in the campaign. The location of the airport is also shown.

Figure S2: Inter-comparison of SMPS at Majadahonda (MJDH) at surface level and ISCIII from 12 to 14 July 2016, considering total particle concentration in the size range 9.14-241.44 nm.

Figure S3: Temperature, relative humidity, wind speed and wind direction measured at the CIEMAT meteorological tower from 6 to 20 July 2016. Temperature and relative humidity are measured at 4 m, and the anemometer is located at 55 m. Time is UTC, local time is UTC+2.

Figure S4: 500 hPa geopotential height, in m, and mean sea level pressure in hPa obtained from the Climate Forecast System reanalysis. The maps correspond to 8, 10, 12 and 15 July 2016, at 12:00 UTC.

Figure S5: Concentrations of BC, O_3, NO and NO_2 measured from 6 to 20 July 2016 at CIEMAT.

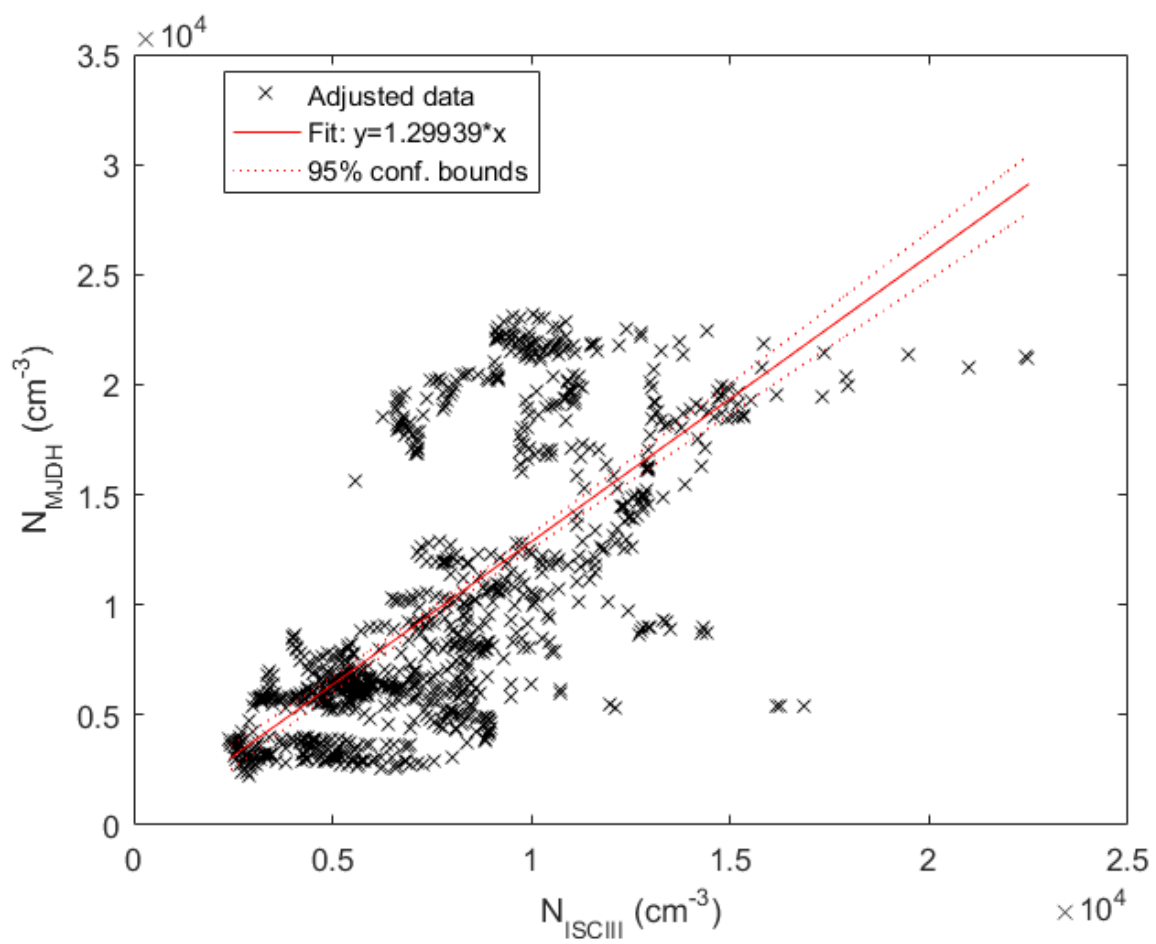
Figure S6: Temporal evolution of the log-normal fitted modes to the particle size distributions from 12 to 14 July 2016 at ISCIII and measured concentrations of three relevant VOCs.

Figure S7: Concentrations of 1.2-4 nm particles measured from 6 to 20 July at CSIC and ISCIII.

Figure S8: Particle size distribution at CSIC, CIEMAT and ISCIII from 4 to 20 July 2016. Total particle concentration of particles in various size ranges is also shown (see legend).

Date	SR$_{Dp<40\,nm}$ (nm h^{-1})			SR$_{Aitk,\,Dp>40\,nm}$ (nm h^{-1})			SR$_{Acc}$ (nm h^{-1})		
	CSIC	CIEMAT	ISCIII	CSIC	CIEMAT	ISCIII	CSIC	CIEMAT	ISCIII
03/07/2016						-1.7			-1.0
12/07/2016	-8.3		-5.4	-7		-9	-19.6		-17.1, -48.7
13/07/2016	-7.9, -5.5					-4.9			
14/07/2016				-20.5, -6.3		-11.9		-37.9	-14.3
15/07/2016		-1.9						-34.6	
16/07/2016		-1.9						-6.8	
17/07/2016			-1.5					-3.7	
18/07/2016		-2.2	-3.6					-11.0	-3.3
19/07/2016								-23.6	

Table S1

Figure S1

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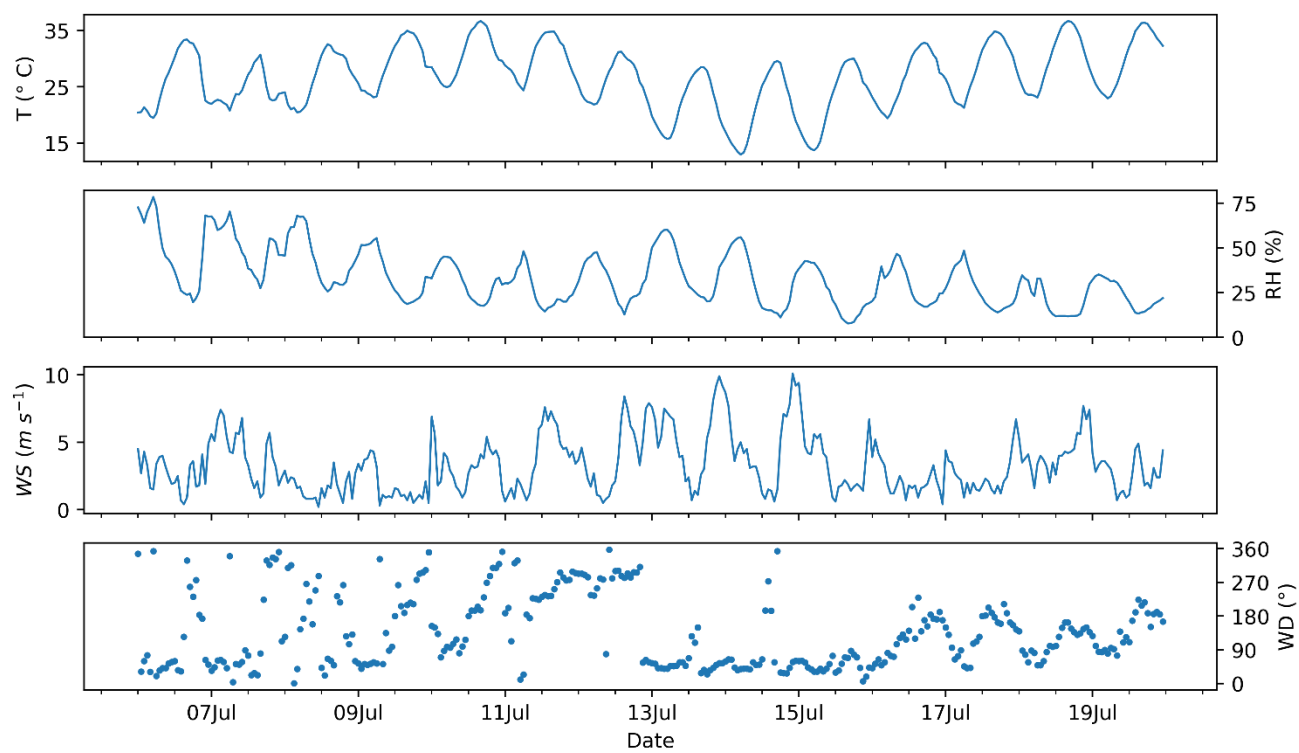
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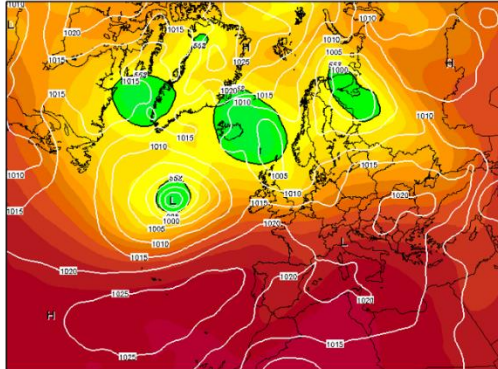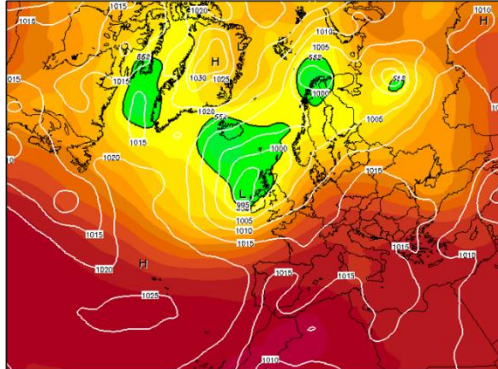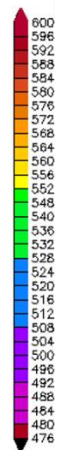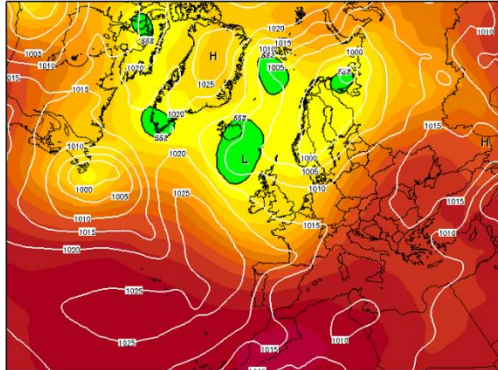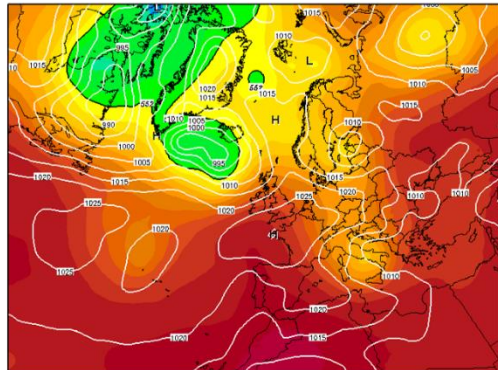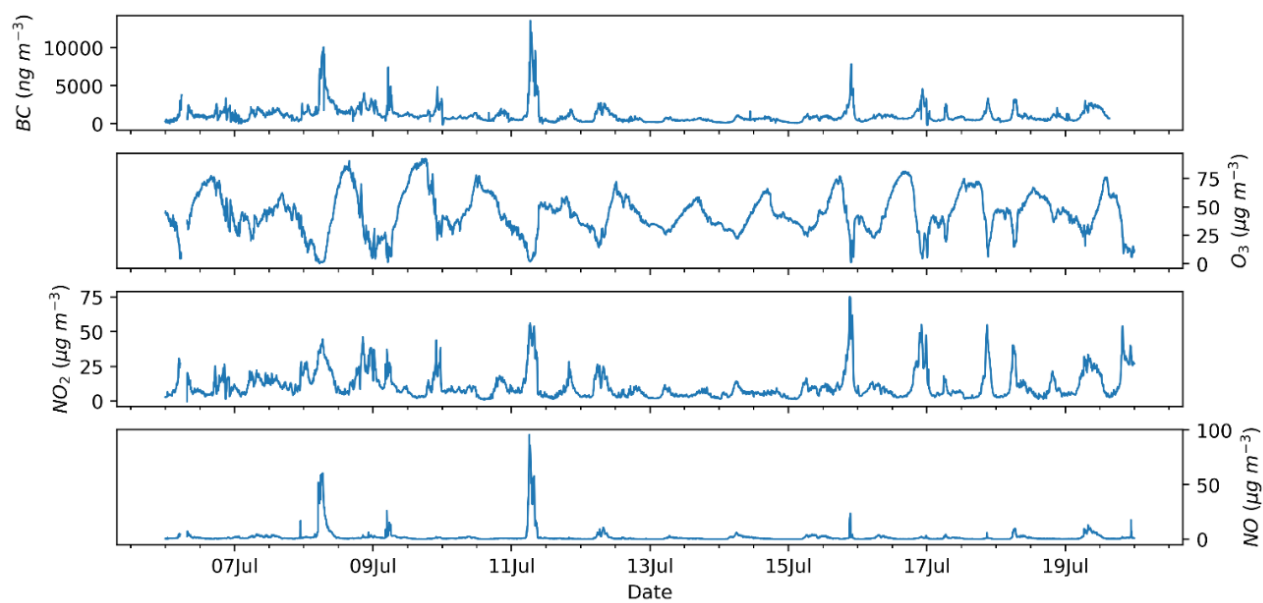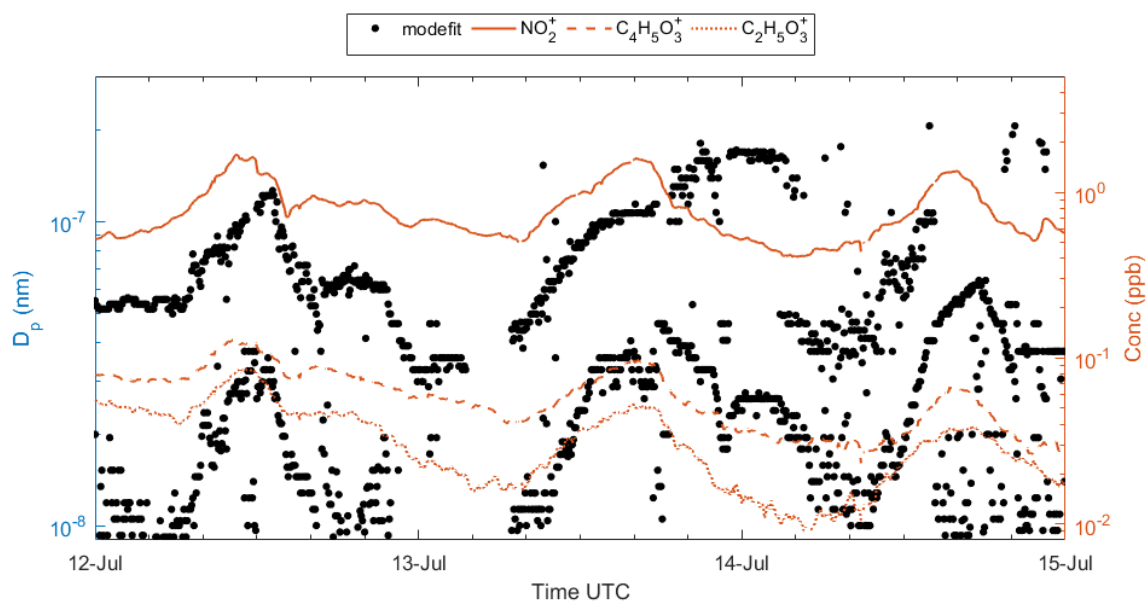
Figure S4

Figure S5

Figure S6

Figure S7

Figure S8