1   *Supplementary material information for*

2   **Molecular composition of organic aerosols in central Amazonia: an ultra-high**
3   **resolution mass spectrometry study**

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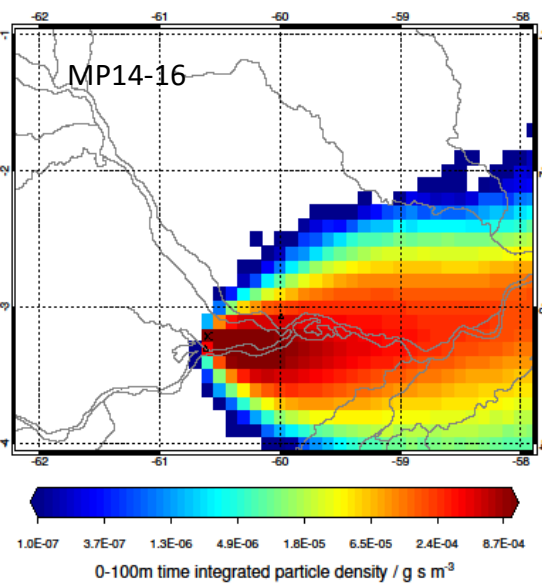
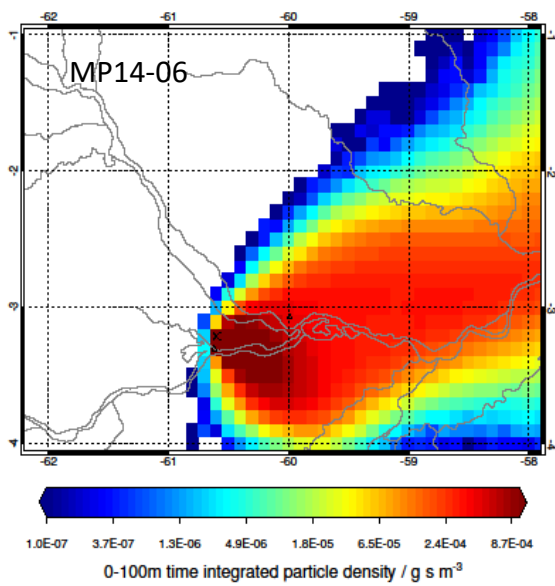
Table SI1. Aerosol sampling time, number of fires, average benzene and NOy concentrations

Filter #ID		Day	Time (UTC)	[1]Number of fires	[2]Benzene (ppbv)	[3]NOy (ppb)
MP14_06	Start	05/03/2014	7H47	0	0.039	0.83
	End	06/03/2014	6H54			
MP14_16	Start	14/03/2014	6H08	1	0.053	1.64
	End	15/03/2014	6H02			
MP14_17	Start	15/03/2014	6H16	4	0.047	1.41
	End	16/03/2014	6H38			
MP14_18	Start	16/03/2014	6H42	3	0.04	1.63
	End	17/03/2014	7H21			
MP14_20	Start	18/03/2014	6H16	0	0.074	2.14
	End	19/03/2014	6H24			
MP14_28	Start	25/03/2014	6H20	2	0.036	0.76
	End	26/03/2014	6H00			
MP14_128	Start	07/09/2014	9H25	28	0.069	2.29
	End	09/09/2014	6H35			
MP14_129	Start	09/09/2014	6H41	9	0.057	1.84
	End	10/09/2014	6H20			
MP14_131	Start	12/09/2014	10H05	15	0.11	2.77
	End	13/09/2014	11H55			
MP14_134	Start	14/09/2014	7H14	22	0.099	2.78
	End	15/09/2014	8H41			
MP14_135	Start	15/09/2014	8H46	33	0.219	3.52
	End	16/09/2014	8H16			
MP14_138	Start	18/09/2014	11H43	36	0.112	1.39
	End	19/09/2014	6H30			
MP14_143	Start	23/09/2014	10H57	254	0.108	1.90
	End	24/09/2014	6H12			
MP14_148	Start	27/09/2014	10H03	340	0.149	4.10
	End	28/09/2014	9H17			
MP14_153	Start	03/10/2014	11H29	69	0.083	1.67
	End	04/10/2014	9H14			

[1]number of fires in the radius of 200 km from the sampling station

[2,3]concentrations were averaged for filter sampling intervals; the instrument detection limit for benzene and NOy were below 0.02 ppbv and 0.05ppb, respectively.

source: http://www.dpi.inpe.br/proarco/bdqueimadas/

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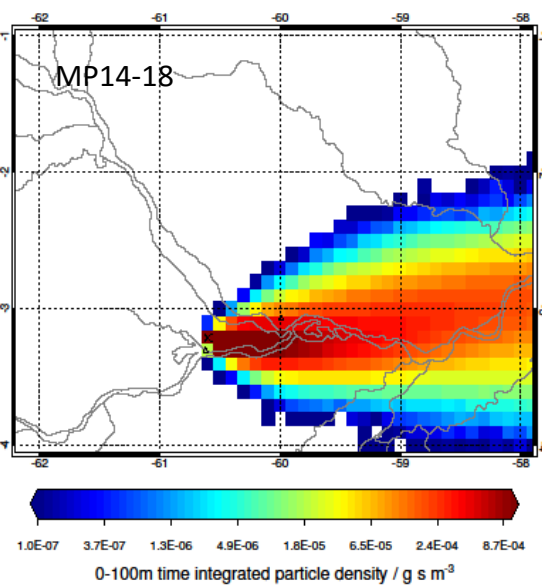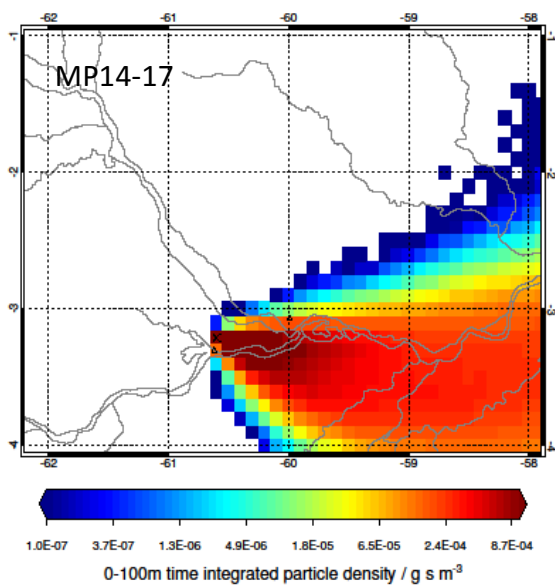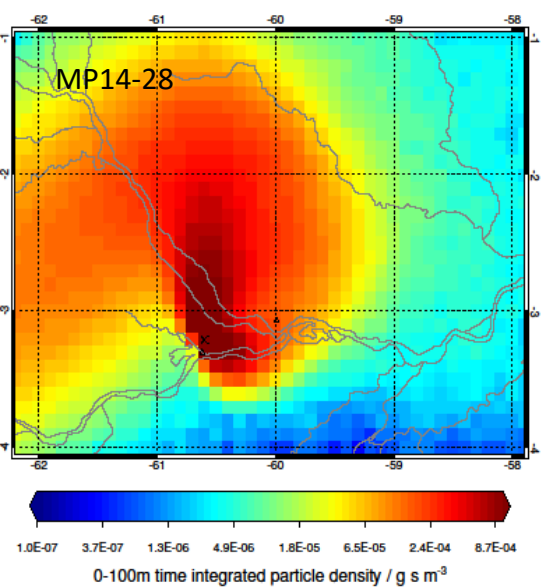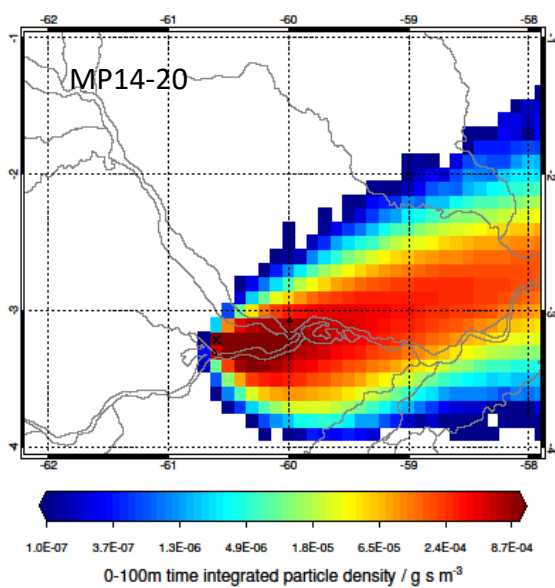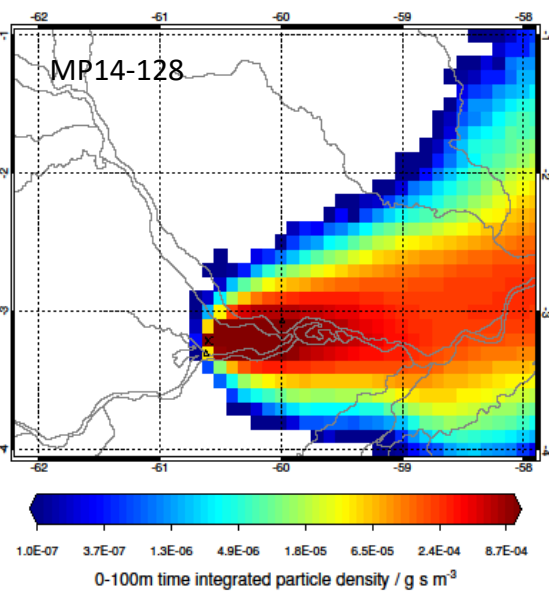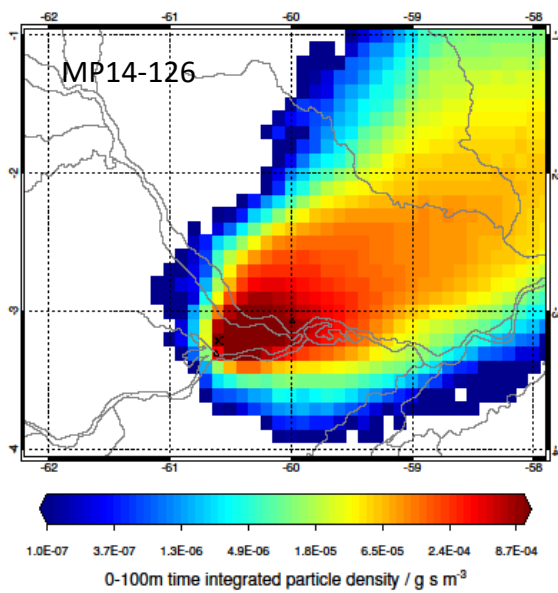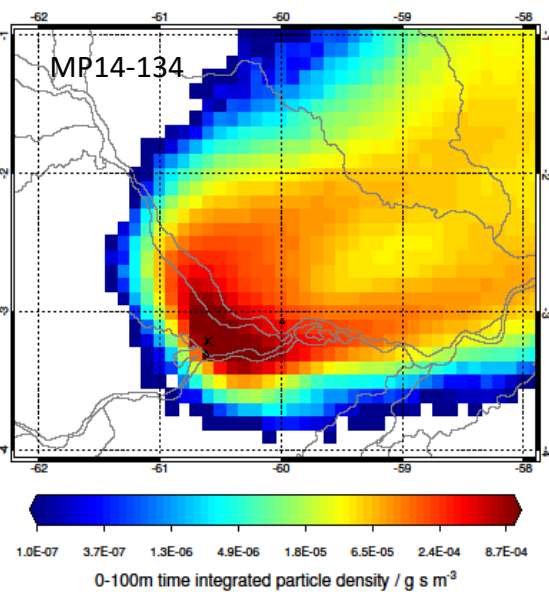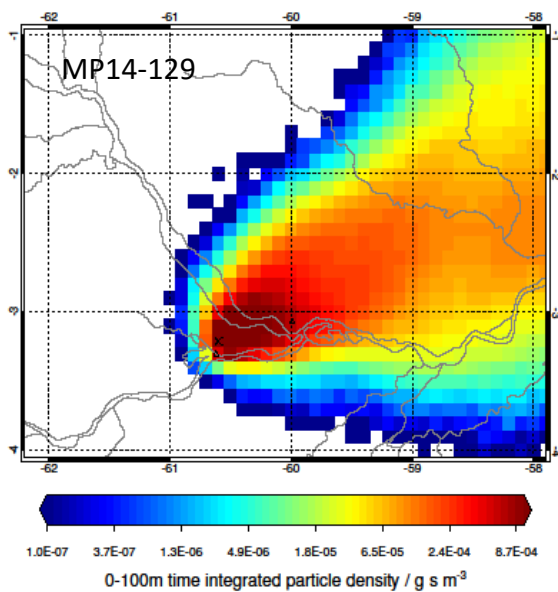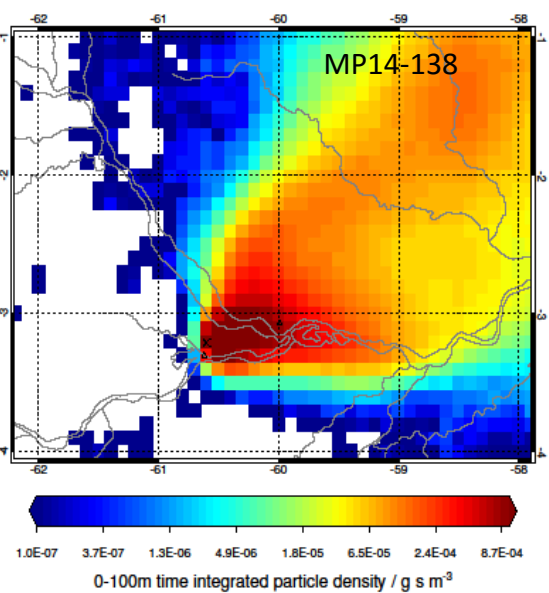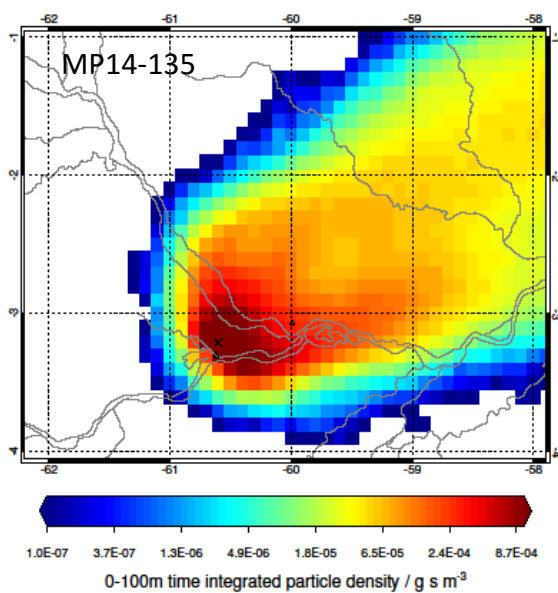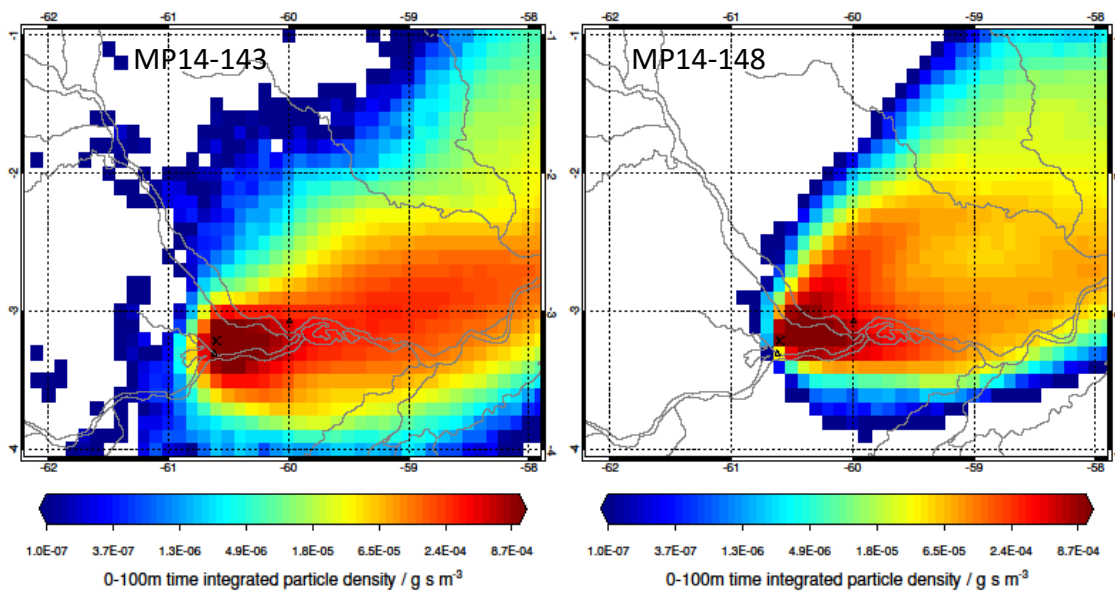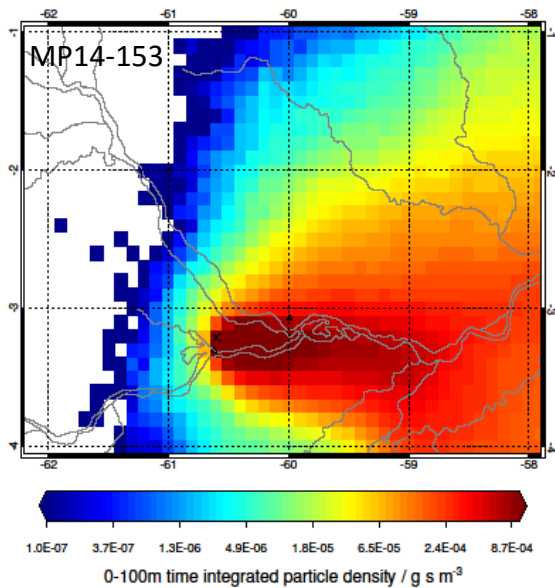
Figure SI1. 72 h back air mass history ('footprints') arriving at the T3 station for the periods of the analysed filters. Warmer colours indicate a greater probability of a particle passing near the surface in a grid box. The sampling site is indicated by a cross symbol. Manaus and Manacupuru cities are indicated as triangles (far right and below of the sampling site, respectively).

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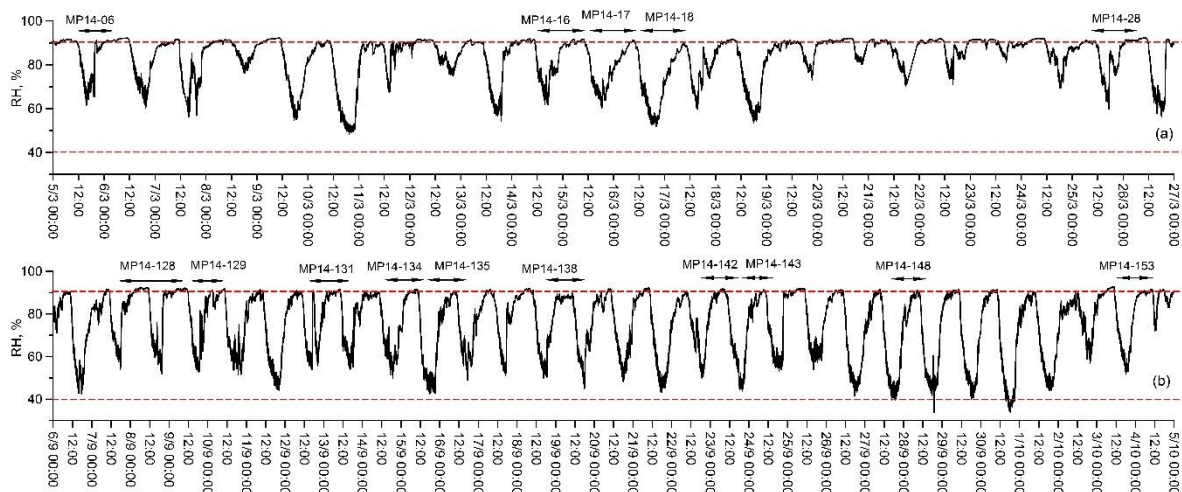
Figure SI2. RH at the T3 sampling site during (a) IOP1 and (b) IOP2 The arrows indicate
sample collection periods. ARM data source.

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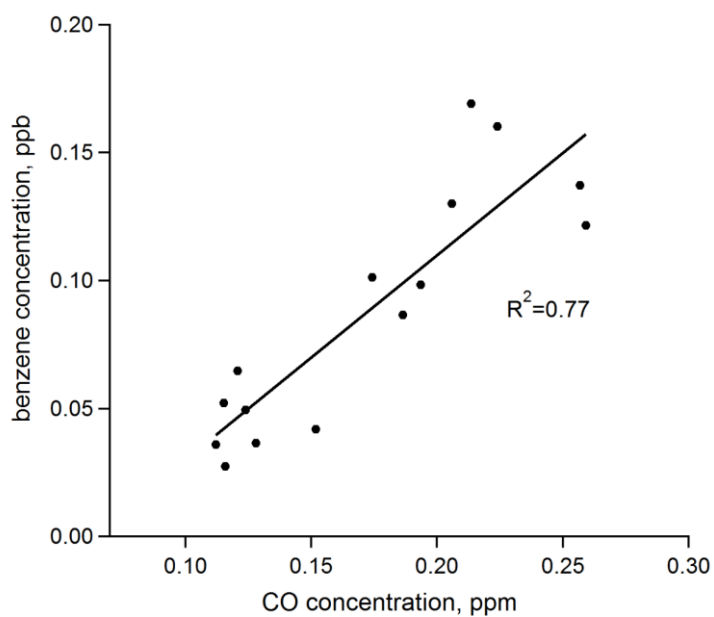
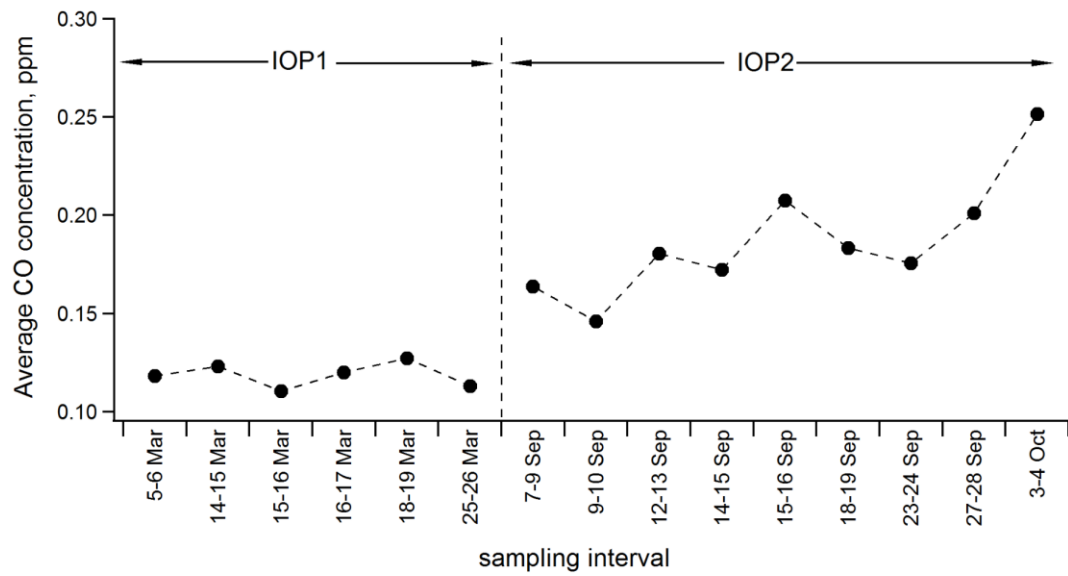


Figure SI3. Correlation between benzene and CO average concentrations during IOP1 and
IOP2 sampling periods at sampling T3 site. The data was averaged for aerosol filter
sampling intervals.

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65   Figure SI4. Average CO concentration during IOP1 and IOP2 sampling periods at T3 site.

66   Each data point corresponds to the average concentration within the sampling interval.
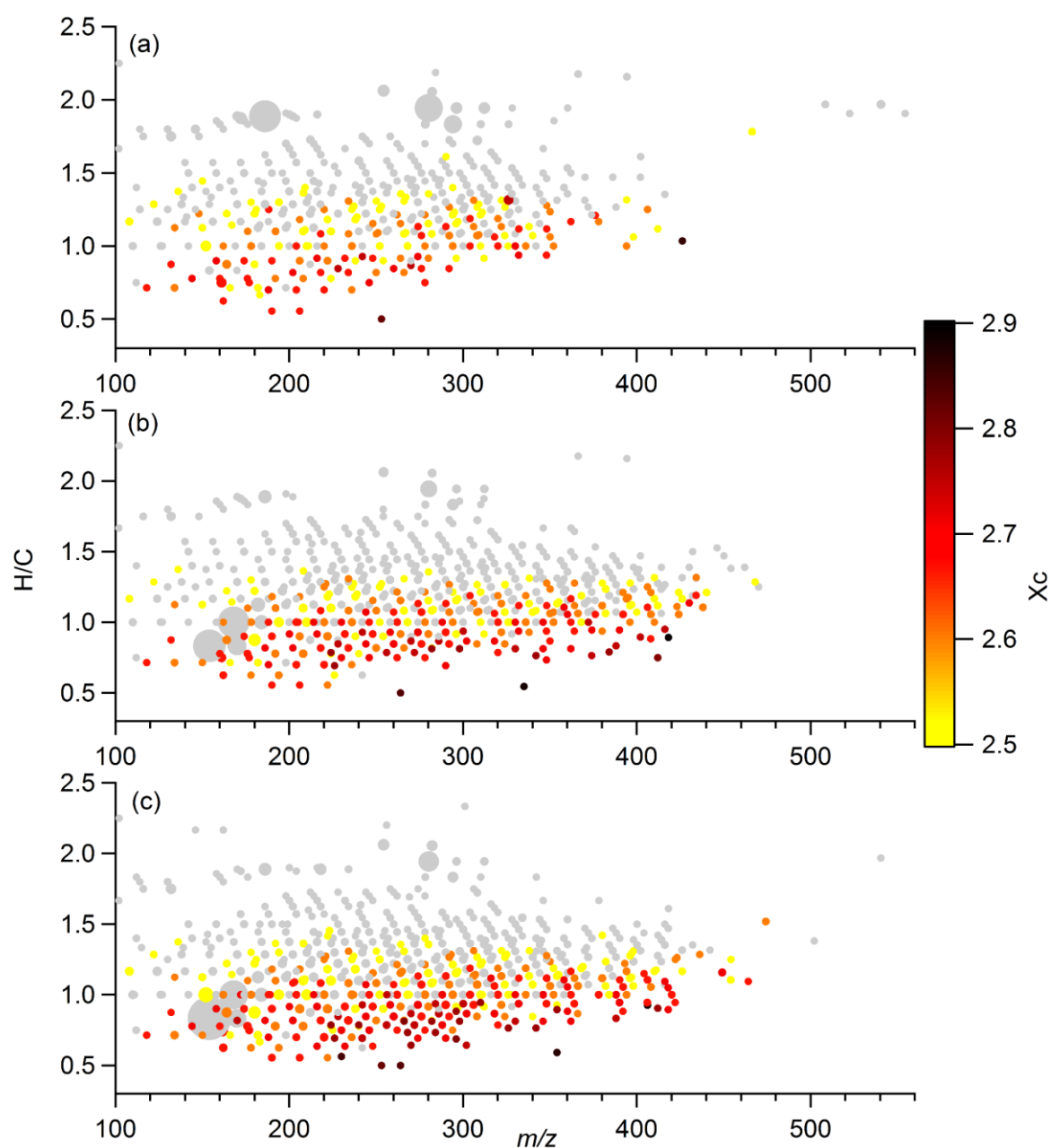
Figure SI5. H/C vs m/z plot for CHON containing formulae in the samples from the periods with (a) low (b) moderately high and (c) very high incidents of fires. The marker areas reflect relative ion abundance in the sample. The colour code shows aromaticity equivalent (Xc) in the individual molecular formula. Molecular formulae with Xc<2.5 are shown as grey markers.

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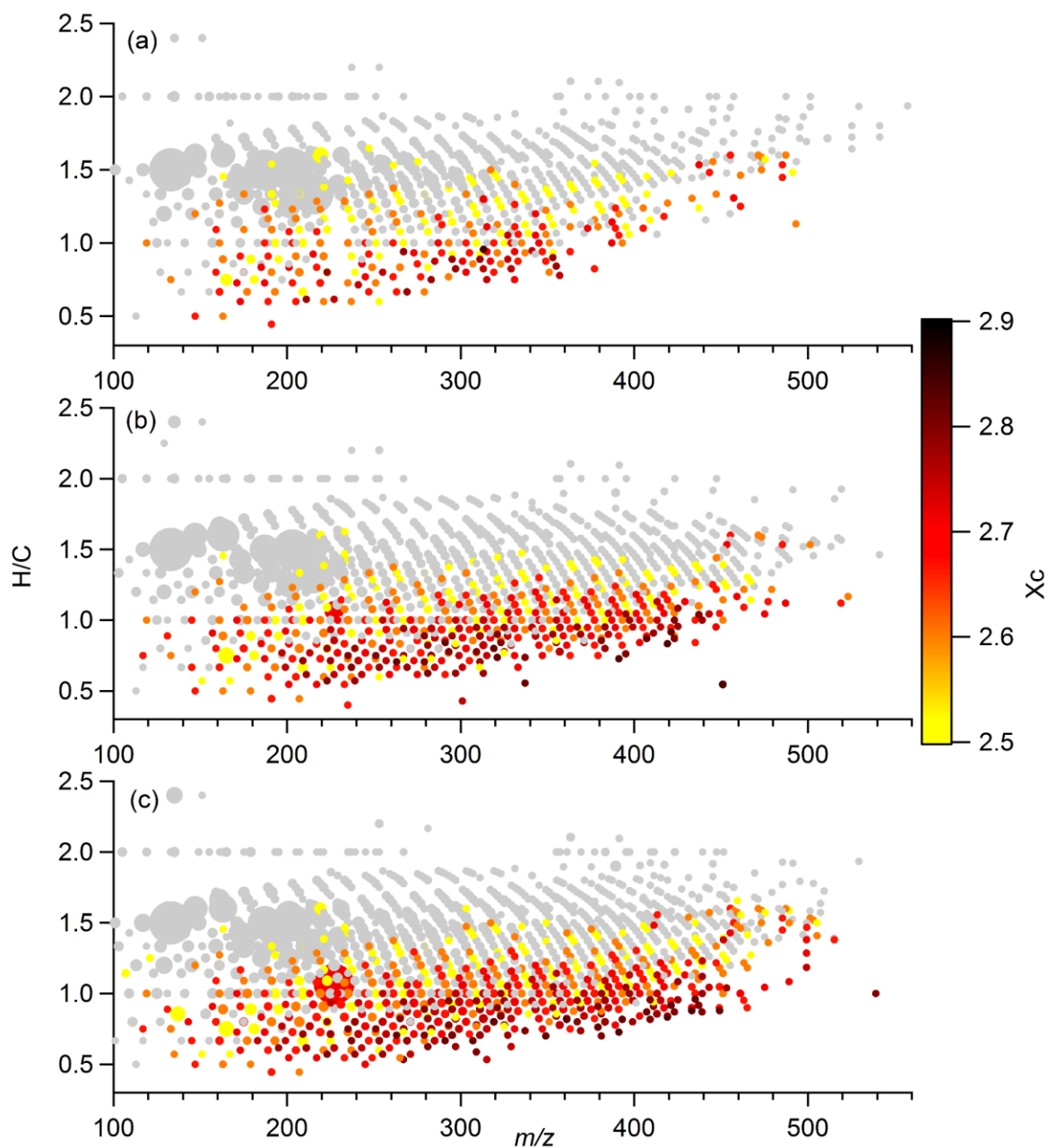
Figure SI6. H/C vs m/z plot for CHO containing compounds in the samples from the periods with (a) low (b) moderately high and (c) very high incidents of fires. The marker areas reflect relative ion abundance in the sample. The colour code shows aromaticity equivalent (Xc) in the individual molecular formula. Molecular formulae with Xc<2.5 are shown as grey markers.

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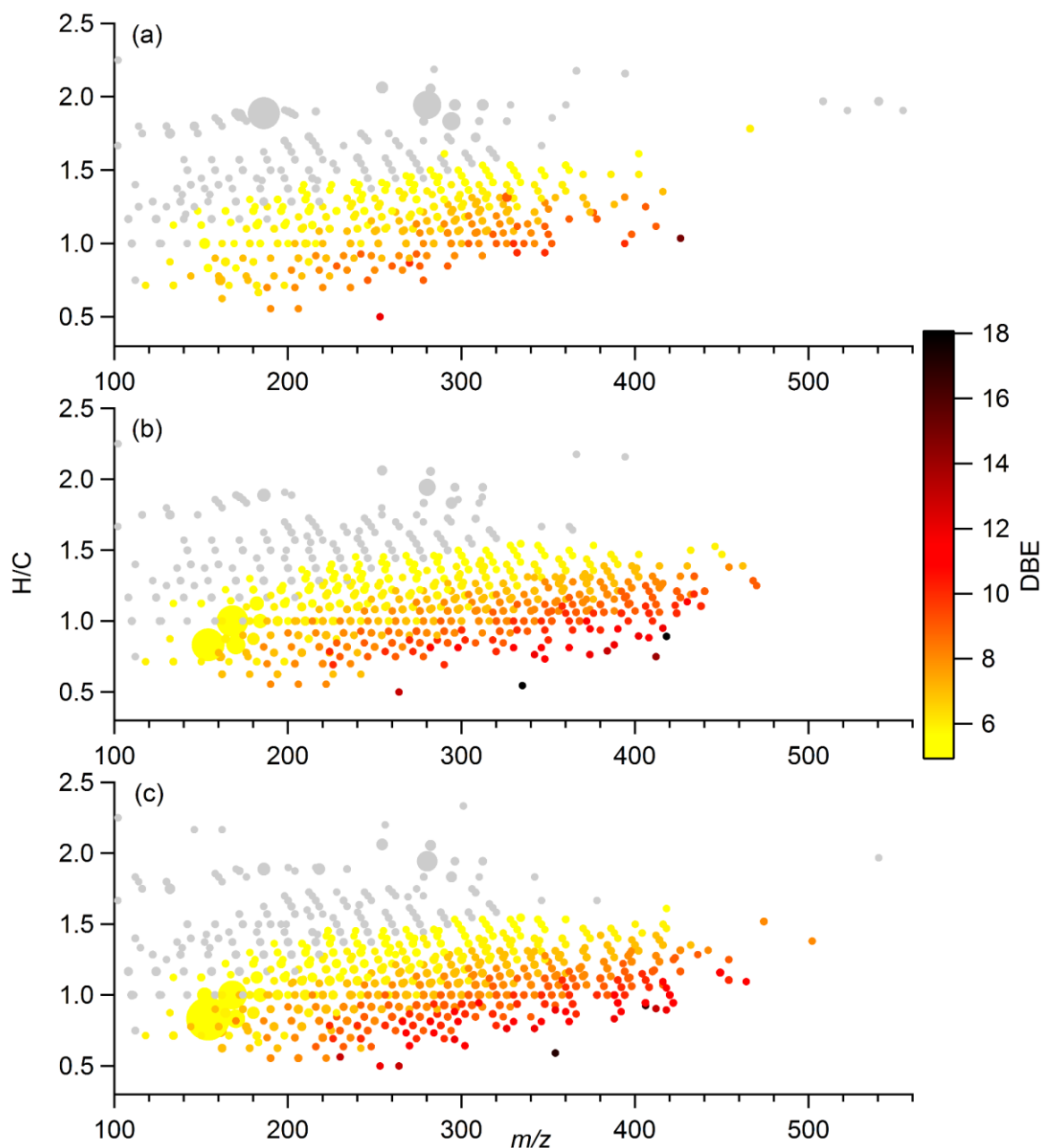
Figure SI7. H/C vs m/z plot for CHON containing compounds in the samples from the periods with (a) low (b) moderately high and (c) very high incidents of fires. The marker areas reflect relative ion abundance in the sample. The colour code shows double bond equivalent (DBE) the individual molecular formula. Molecular formulae with DBE<5 are shown as grey markers.

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