Sources and processes that control the submicron organic aerosol in an urban Mediterranean environment (Athens) using high temporal resolution chemical composition measurements.

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Affiliations and footnotes are as in the main manuscript file

Supporting Information Appendix

This Document contains supplementary data as referred to in the main manuscript.

SI.1 ACSM Quality Assurance/ Quality Control

As a first quality control/quality assurance of the obtained data, ammonium concentrations obtained by the ACSM are compared to the respective ammonium concentrations derived from the PILS, both for winter 2016-17 as well as winter 2013-2014. Both measurements are averaged hourly for synchronization reasons. The respective graphs are given in the following figures (Figure SI.1.1, SI.1.2). Furthermore, ACSM concentrations are daily-averaged and the derived averages are compared to the respective concentrations obtained by ion chromatography analysis and thermal-optical analysis of the respective daily $PM_{2.5}$ filters for all the winter periods (Figure SI.1.1, SI.1.2).

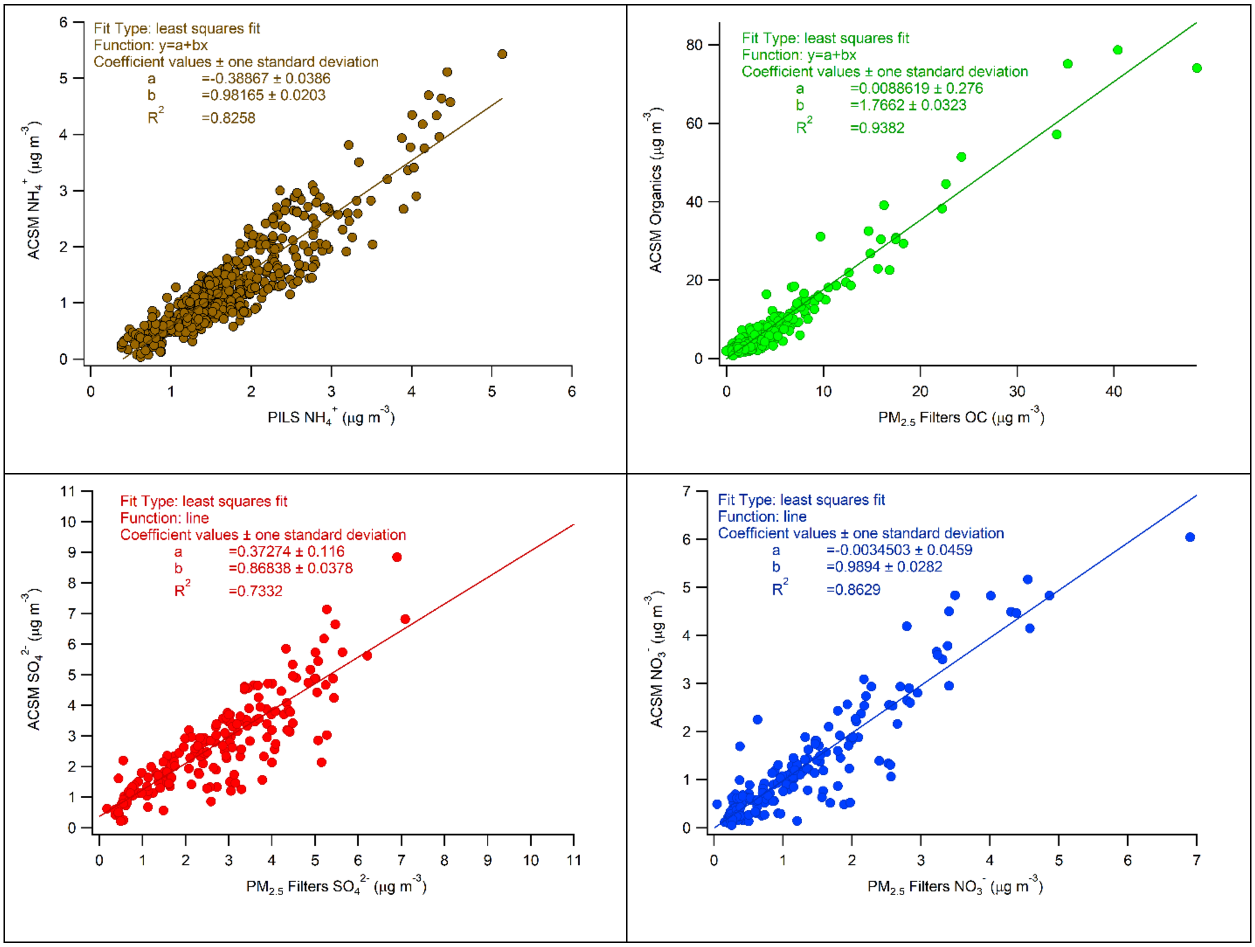


Figure SI.1.1: Correlations of the non-refractory PM_1 constituents as measured by the ACMS versus external measurements for the year-long period 2016-2017. Top left ammonium from ACSM vs PILS measurements, top right ACSM Organics vs OC measured on filters using a thermal optical method, bottom left ACSM sulfate vs IC sulfate and bottom left ACSM nitrate vs IC nitrate.

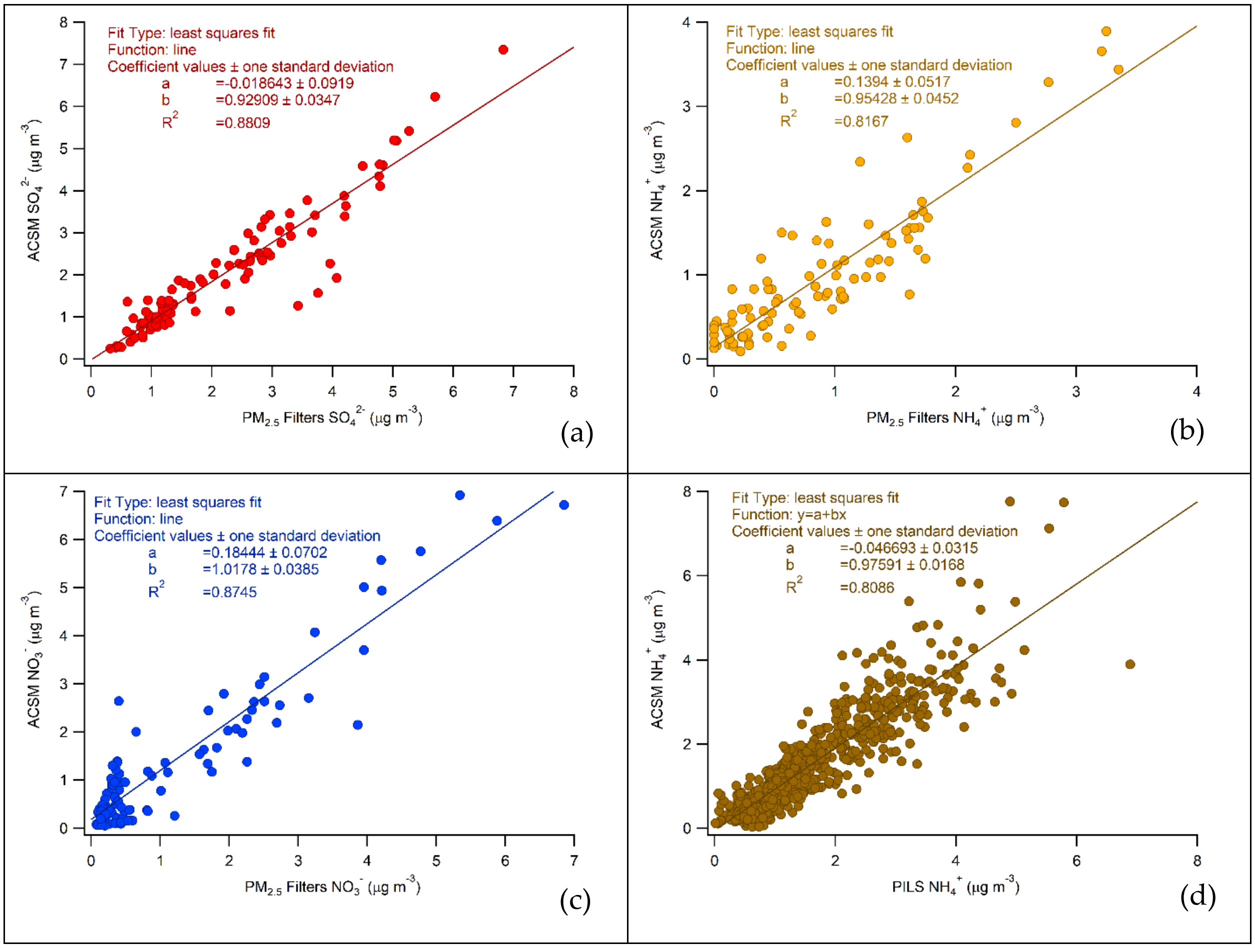
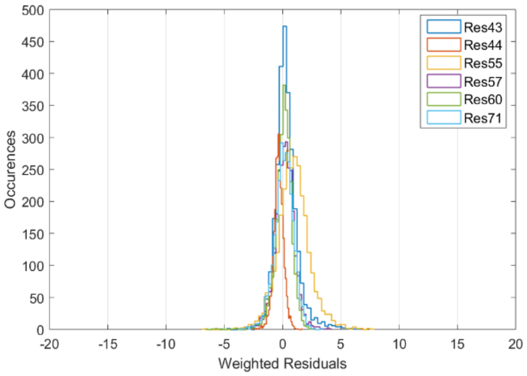


Figure SI.1.2: Correlations of the non-refractory PM$_1$ constituents as measured by the ACMS versus external measurements for the wintertime intensive campaigns of 2013-2014 and 2015-2016. Top left ACSM sulfate vs IC sulfate (2015-2016), top right ACSM ammonium vs IC ammonium (2015-2016), bottom left ACSM nitrate vs IC nitrate (2015-2016) and bottom left ACSM ammonium vs PILS ammonium (2013-2014)

SI.2 PMF solutions

For the selected solutions, residuals weighted over uncertainty analysis and Organics concentration reconstruction, as resulting from the sum of the different PMF Factors is provided in the following figure.

<table>
<tr>
<td>Summer
2016</td>
<td>
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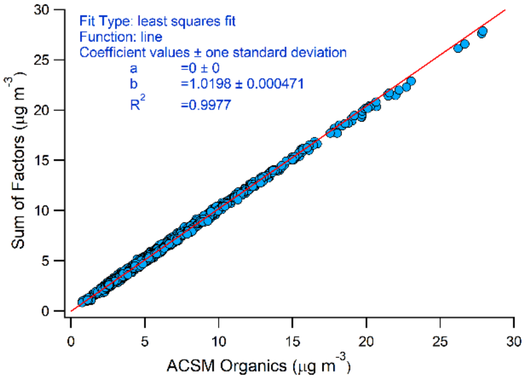
<td>
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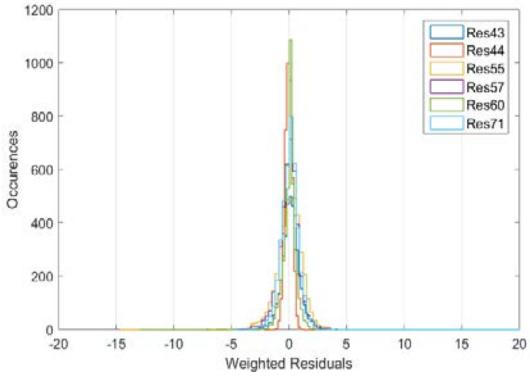
2017</td>
<td>
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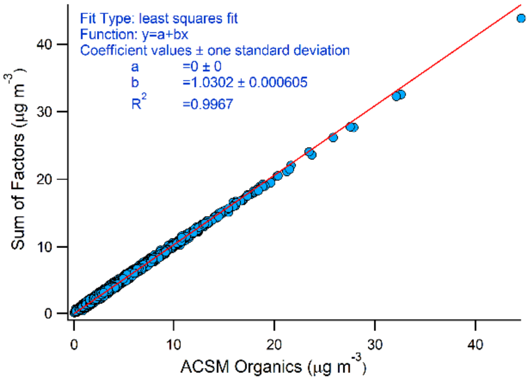
<td>
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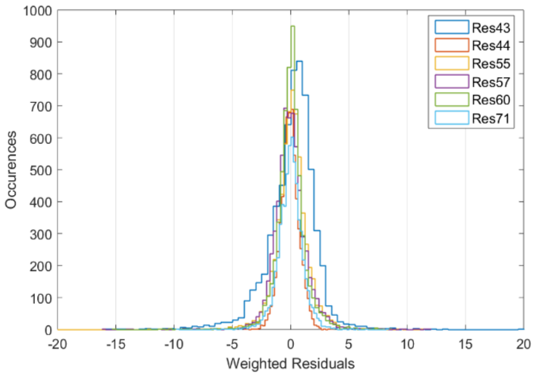
<td>Winter
2017</td>
<td>
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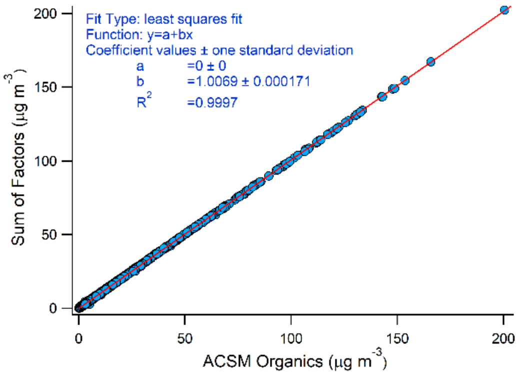
<td>
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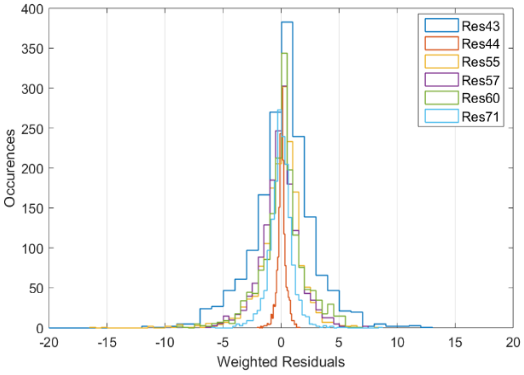
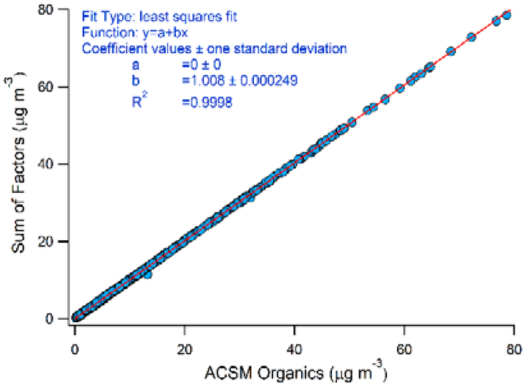
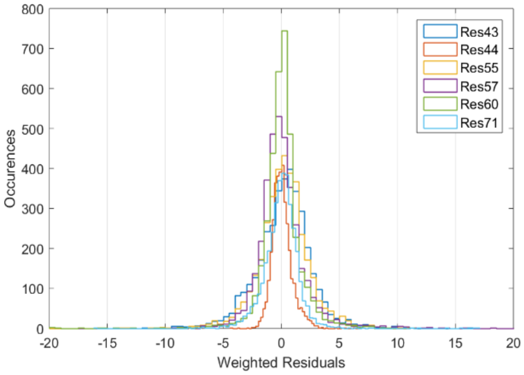
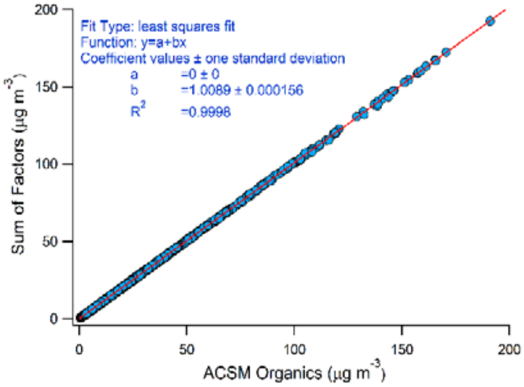
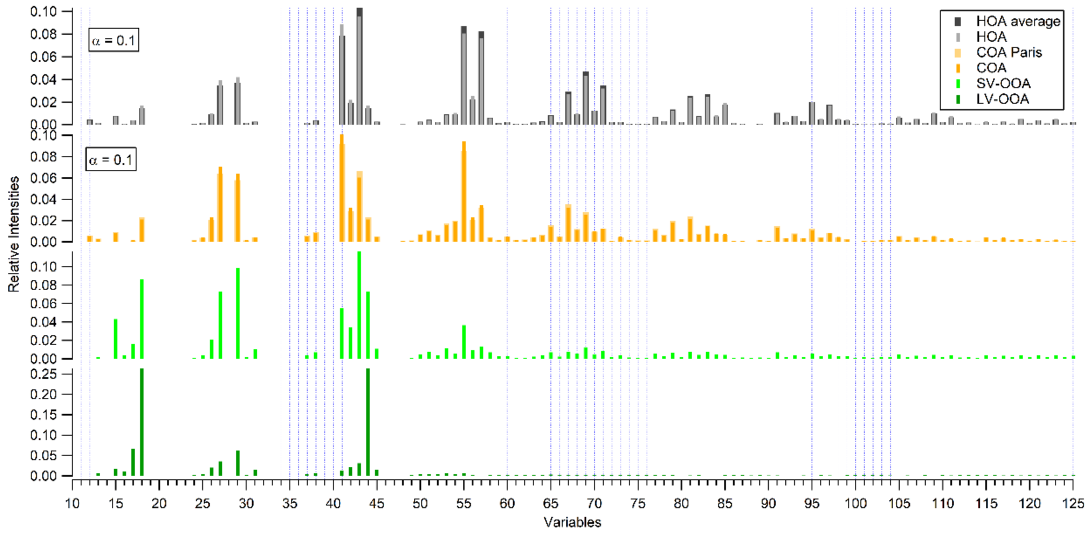
Winter 2015		
Winter 2013		

Figure SI.2.1: Histograms of weighted residuals for variables m/z 43, 44, 55, 57, 60, 71 of the selected solutions and comparison of the sum of the PMF Factors with the Organics measured by the ACSM.

Summertime: The derived mass spectra, together with the α-values used, of the four different factors for the two summer-time periods are shown in the following figure. For all selected solutions, the mass spectra are compared to reference mass spectra found in the AMS mass spectral database (http://cires.colorado.edu/jimenez-group/AMSsd/), using the theta angle approach proposed by Kostenidou et al. (2009) for which calculated angles less than 15° correspond to $R > 0.96$ thus indicate spectra which are similar to each other, angles between 15° and 30° correspond to $0.96 > R > 0.86$ and indicate some similarity but also some important differences between the compared spectra, while angles larger than 30° correspond to correlation coefficient $R < 0.86$ and thus are considered to indicate spectra that do not compare well. The following tables provides the comparison of the selected solutions' mass spectra for each winter. Selected solutions are chosen based on their affinity to reference mass spectra, combined with the correlation of the factors with external time series, provided in the following section.

Summer

2016



Summer

2017

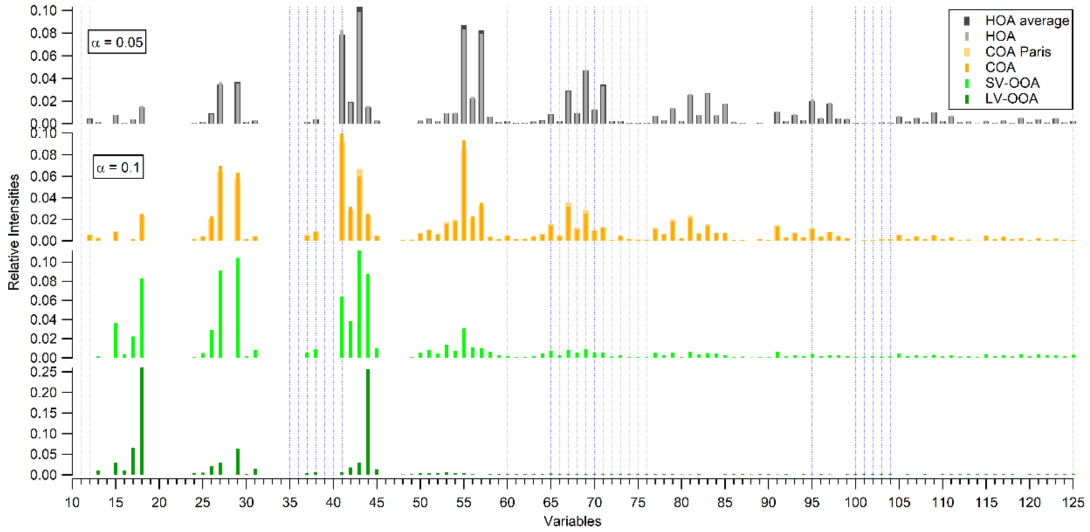


Figure SI.2.2: Mass spectra of the derived PMF Factors and reference spectra used, together with the corresponding α-values for the two studied summer periods.

Summer 2016 selected solution with the respective theta angles:

	Hyytiala_Aijala2017	Crippa_2014	Paris Winter Crippa13	HOA avg Ng11	HOAwarm17				
HOA	11.9	4.4	6.5	5.1	1.6				
	Hyytiala_Aijala2017	Paris Winter Crippa13	MeatCharbroiling2	MeatCharbroiling3	COAwarm17				
COA	17.8	6.5	14.3	14.9	1.9				
	Hyytiala_Aijala2017	Crippa_2014	SVOOAavg Ng11	OOABB Finokalia	SOAa-pinene	SOAb-pinene	SOAdiesel exhaust	IEPOX-OA	SV-OOAwarm17
SV-OOA	28.8	14.1	16.5	24	20.2	18.6	19.8	16.2	11.9
	Hyytiala_Aijala2017	Crippa_2014	LVOOAavg Ng11	OOA Finokalia	LV-OOAwarm17				
LV-OOA	42	10.8	17.8	3.4	2.4				

Rejected solution:

	Hyytiala_Aijala2017	Crippa_2014	Paris Winter Crippa13	HOA avg Ng11
HOA	11.2	4.1	5.8	2.6

	Hyytiala_Aijala2017	Paris Winter Crippa13	MeatCharbroiling2	MeatCharbroiling3
COA	17.9	6.5	14.1	14.8

	Hyytiala_Aijala2017	Crippa_2014	SVOOAavg Ng11	OOABB Finokalia	SOAa-pinene	SOAb-pinene	SOAdiesel exhaust	IEPOX-OA
SV-OOA	31.1	20.6	14.9	31.2	21.3	20.8	21.6	19.4

	Hyytiala_Aijala2017	Crippa_2014	LVOOAavg Ng11	OOA Finokalia
LV-OOA	42.6	11.3	18.3	3.1

The presented tables provide the theta angle between the selected and the rejected solution for summer 2016. These theta angles represent the affinity of the resulting PMF factors and relevant spectra found in the AMS mass spectral database as well as with the respective solution of 2017. More specifically, as mentioned in the manuscript, these mass spectra refer to Hyytiälä (Äijälä et al. 2017), several sites in Europe (Crippa et al., 2014), wintertime in Paris (Crippa et al., 2013), meat charbroiling (Kaltsonoudis et al., 2017) averaged factors (Ng et al., 2011), Finokalia (Bougiatioti et al., 2014), biogenic SOA (Bahreini et al., 2005) and IEPOX-OA (Budisulistiorini et al., 2013).

Summer 2017 selected solution with the respective theta angles:

	Hyytiala_Aijala2017	Crippa_2014	Paris Winter Crippa13	HOA avg Ng11
HOA	11.7	4.6	6.4	2.4

	Hyytiala_Aijala2017	Paris Winter Crippa13	MeatCharbroiling2	MeatCharbroiling3
COA	18.2	7.4	15.1	15.7

	Hyytiala_Aijala2017	Crippa_2014	SVOOAavg Ng11	OOABB Finokalia	SOAa-pinene	SOAb-pinene	SOADiesel exhaust	IEPOX-OA
SV-OOA	27.9	14.2	20.2	24.8	20.5	18.2	19.4	16.5

	Hyytiala_Aijala2017	Crippa_2014	LVOOAavg Ng11	OOA Finokalia
LV-OOA	42.5	11.7	18.2	3.6

For the warm period of 2017, only one solution presented mass spectra which could relate to the anticipated factors. Once more the derived mass spectra are compared to the spectra from Hyytiälä (Äijälä et al. 2017), several sites in Europe (Crippa et al., 2014), wintertime in Paris (Crippa et al., 2013), meat charbroiling (Kaltsonoudis et al., 2017) averaged factors (Ng et al., 2011), Finokalia (Bougiatioti et al., 2014), biogenic SOA (Bahreini et al., 2005) and IEPOX-OA (Budisulistiorini et al., 2013).

Apart from their affinity to reference mass spectra, factors of the derived solutions were also compared to external time series in order to conclude and select the most reasonable solution. The results of the comparison with the external time series are the respective ones of the solutions provided just above for the reference mass spectra. Numbers represent the squared Pearson correlation coefficient R^2 between the PMF factors time series and external time series while correlations higher than 45% are in bold.

Summer 2016 selected solution with the respective correlation coefficients:

Timeseries	CO	BCtot	NO3	SO4	NH4	Chl	m/z60
HOA	**0.56**	0.03	0.31	0.03	0.03	0.13	**0.51**
COA	0.24	0.02	0.21	0.02	0.01	0.14	**0.67**
LV-OOA	0.11	0.18	0.23	0.39	**0.49**	0.11	0.43
SV-OOA	**0.49**	0.16	**0.81**	0.09	0.32	0.11	**0.65**

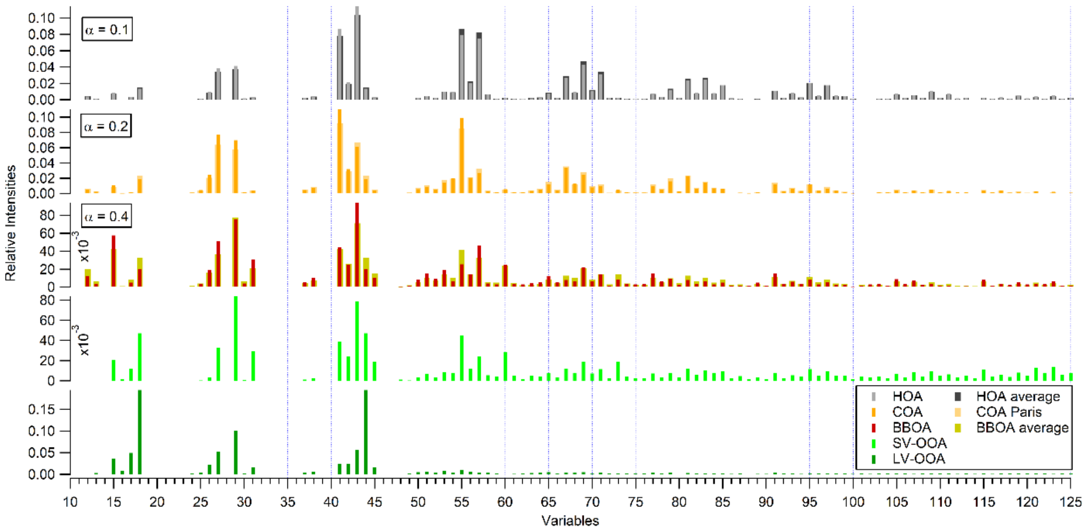
Rejected solution:

Timeseries	CO	BCtot	NO3	SO4	NH4	Chl	m/z60
HOA	**0.43**	0.02	0.28	0.03	0.02	0.08	**0.46**
COA	0.19	0.02	0.18	0.02	0.01	0.09	**0.65**
LV-OOA	0.14	0.12	0.26	0.29	0.28	0.09	**0.45**
SV-OOA	**0.41**	0.06	**0.76**	0.1	0.11	0.11	**0.63**

Summer 2017 selected solution with the respective correlation coefficients:

Timeseries	nss-K	CO	BCtot	BCwb	BCff	NO3	SO4	NH4	Chl
HOA	0.03	**0.44**	0.43	0.3	0.4	**0.62**	0.12	0.13	0.17
COA	0.02	0.32	0.13	0.15	0.11	0.35	0.04	0.05	0.14
LV-OOA	0.03	0.01	0.05	0.06	0.05	0.28	**0.46**	**0.54**	0.07
SV-OOA	0.02	0.38	0.36	0.31	0.33	**0.88**	0.23	0.24	0.22

Wintertime: The derived mass spectra, together with the α-values used, of the five different factors for the three wintertimes are shown in the following figure. It is apparent that the SV-OOA factor for all studied winters originates from biomass burning, as it contains amounts of m/z 60 and 73.

Winter 2017	

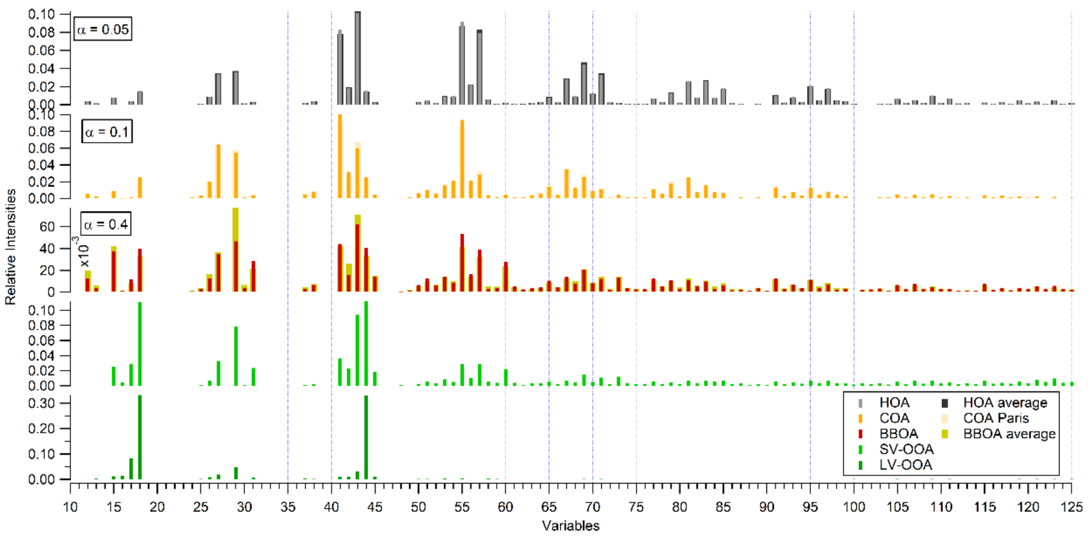
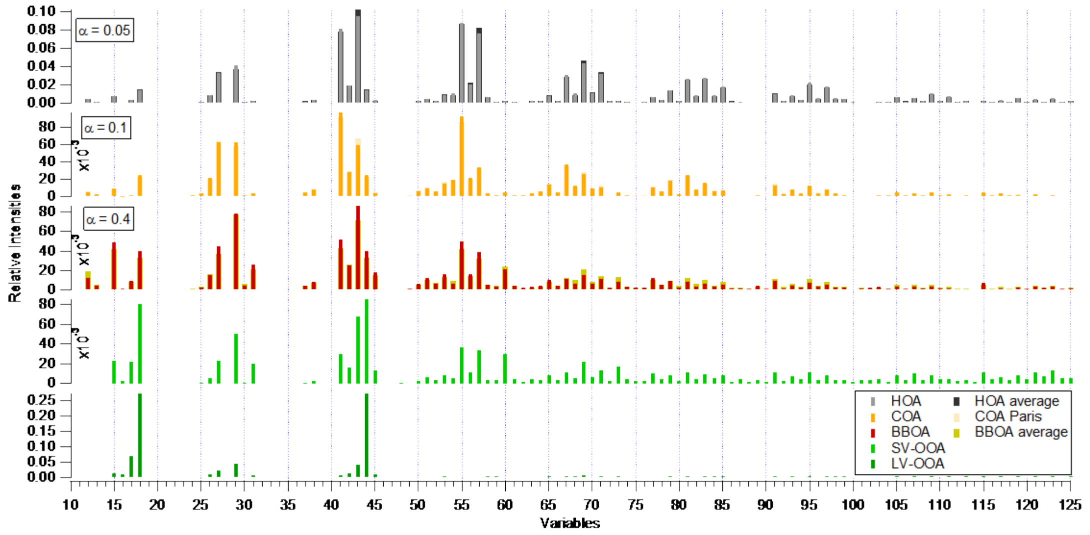
Winter 2015	
Winter 2013	

Figure SI.2.3: Mass spectra of the derived PMF Factors and reference spectra used, together with the corresponding α-values for the three studied winters.

Once more, the mass spectra are compared to reference mass spectra found in the AMS mass spectral database using the theta angle approach, where less than 15° correspond to $R > 0.96$ thus indicate spectra which are similar to each other, angles between 15° and 30° correspond to $0.96 > R > 0.86$ and indicate some similarity but also some important differences between the compared spectra, while angles larger than 30° correspond to correlation coefficient $R < 0.86$ and thus are considered to indicate spectra that do not compare well. The following tables provides the comparison of the selected solutions' mass spectra for each winter. Selected solutions are chosen based on their affinity to reference mass spectra, combined with the correlation of the factors with external time series, provided in the next section. More specifically, the mass spectra refer to Hyytiälä (Äijälä et al. 2017), several sites in

Europe (Crippa et al., 2014), wintertime in Paris (Crippa et al., 2013), meat charbroiling (Kaltsonoudis et al., 2017) averaged factors (Ng et al., 2011), wintertime in Zurich (Lanz et al., 2008), Finokalia (Bougiatioti et al., 2014), different kind of wood (Schneider et al., 2006) as well as within the different winter periods.

Winter 2017 selected solution:

	Hyytiala_Aijala2017	Crippa_2014	Paris Winter Crippa13	HOA avg Ng11	Zurich Winter Lanz	HOA15-16
HOA	9.6	5	5.8	5.1	12.8	1.2

	Hyytiala_Aijala2017	Paris Winter Crippa13	MeatCharbroiling2	MeatCharbroiling3	COA15-16
COA	16.9	6.2	13.2	14.9	3.7

	Crippa_2014	Paris winter Crippa13	BBOAavg Ng11	Zurich Winter Lanz	Oak Schneider	Spruce Schneider	Kostenidou_olive	BBOA Finokalia	BBOA15-16
BBOA	20	26.5	11.5	23.4	15.7	19.8	24.2	20.1	9.7

	Hyytiala_Aijala2017	Crippa_2014	Paris winter Crippa13	OOABB Finokalia	SV-OOA15-16	SOAb-pinene	IEPOX-OA
SV-OOA	26.2	26.2	25.2	30	17.1	18.6	22.8

	Hyytiala_Aijala2017	Crippa_2014	Paris winter Crippa13	LVOOAavg Ng11	Zurich winter Lanz	OOA Finokalia	LV-OOA15-16
LV-OOA	32	8.4	29.1	8.3	9.3	15.1	3.2

Rejected solutions

	Hyytiala_Aijala2017	Crippa_2014	Paris Winter Crippa13	HOA avg Ng11	Zurich Winter Lanz	HOA15-16
HOA	9.2	5.6	6.1	5.6	13.1	5.8

	Hyytiala_Aijala2017	Paris Winter Crippa13	MeatCharbroiling2	MeatCharbroiling3	COA15-16
COA	15.6	5.7	13.8	14.5	4.7

	Crippa_2014	Paris winter Crippa13	BBOAavg Ng11	Zurich Winter Lanz	Oak Schneider	Spruce Schneider	Kostenidou_olive	BBOA Finokalia	BBOA15-16
BBOA	20	26.5	11.5	23.4	15.7	19.8	24.2	20.1	9.7

	Hyytiala_Aijala2017	Crippa_2014	Paris winter Crippa13	OOABB Finokalia	SV-OOA15-16	SOAb-pinene	IEPOX-OA
SV-OOA	22.3	29.1	26.3	26.4	22.9	26.7	22.6

	Hyytiala_Aijala2017	Crippa_2014	Paris winter Crippa13	LVOOAavg Ng11	Zurich winter Lanz	OOA Finokalia	LV-OOA15-16
LV-OOA	34.2	8.3	31.4	10.7	12.1	13.7	17.4

	Hyytiala_Aijala2017	Crippa_2014	Paris Winter Crippa13	HOA avg Ng11	Zurich Winter Lanz	HOA15-16
HOA	9.8	4.6	5.4	2.8	11.8	3.4

	Hyytiala_Aijala2017	Paris Winter Crippa13	MeatCharbroiling2	MeatCharbroiling3	COA15-16
COA	17	6.2	14.4	14.9	3.8

	Crippa_2014	Paris winter Crippa13	BBOAavg Ng11	Zurich Winter Lanz	Oak Schneider	Spruce Schneider	Kostenidou_olive	BBOA Finokalia	BBOA15-16
BBOA	19.6	24.6	12.6	21.6	16.8	22	21.7	26.9	17.4

	Hyytiala_Aijala2017	Crippa_2014	Paris winter Crippa13	OOABB Finokalia	SV-OOA15-16	SOAb-pinene	IEPOX-OA
SV-OOA	25.6	26.9	26.6	31.4	26.6	24.9	21.8

	Hyytiala_Aijala2017	Crippa_2014	Paris winter Crippa13	LVOOAavg Ng11	Zurich winter Lanz	OOA Finokalia	LV-OOA15-16
LV-OOA	32.1	8.7	30	8.5	9.5	16.3	20.2

Winter 2015:

	Hyytiala_Aijala2017	Crippa_2014	Paris Winter Crippa13	HOA avg Ng11	Zurich Winter Lanz
HOA	11.3	5.4	6.9	2,5	11

	Hyytiala_Aijala2017	Paris Winter Crippa13	MeatCharbroiling2	MeatCharbroiling3
COA	17.8	7.4	14.6	14.7

	Crippa_2014	Paris winter Crippa13	BBOAavg Ng11	Zurich Winter Lanz	Oak Schneider	Spruce Schneider	Kostenidou_olive	BBOA Finokalia
BBOA	20.3	29.2	14.1	29.1	23	21.7	17.3	28.1

	Hyytiala_Aijala2017	Crippa_2014	Paris winter Crippa13	OOABB Finokalia	IEPOX-OA	SOAb-pinene
SV-OOA	32.3	16.2	31	13.1	20	31.6

	Hyytiala_Aijala2017	Crippa_2014	Paris winter Crippa13	LVOOAavg Ng11	Zurich winter Lanz	OOA Finokalia
LV-OOA	46.6	15.9	41.1	22.8	25.9	4.9

For the winter period of 2015, only one solution presented mass spectra which could relate to the anticipated factors. Once more the derived mass spectra are compared to the spectra from the mass spectra refer to Hyytiälä (Äijälä et al. 2017), several sites in Europe (Crippa et al., 2014), wintertime in Paris (Crippa et al., 2013), meat charbroiling (Kaltsonoudis et al., 2017) averaged factors (Ng et al., 2011), wintertime in Zurich (Lanz et al., 2008), Finokalia (Bougiatioti et al., 2014), different kind of wood (Schneider et al., 2006) as well as within the different winter periods.

Winter 2013 selected solution:

	Hyytiala_Aijala2017	Crippa_2014	Paris Winter Crippa13	HOA avg Ng11	Zurich Winter Lanz	HOA15-16			
HOA	12.1	5.6	7.2	3.7	12.5	2.9			
	Hyytiala_Aijala2017	Paris Winter Crippa13	MeatCharbroiling2	MeatCharbroiling3	COA15-16				
COA	18.3	7	14.4	14.7	3.5				
	Crippa_2014	Paris winter Crippa13	BBOAavg Ng11	Zurich Winter Lanz	Oak Schneider	Spruce Schneider	Kostenidou_olive	BBOA Finokalia	BBOA15-16
BBOA	15.7	26.6	8.1	17.1	18.2	19.8	17.2	24.7	13.3
	Hyytiala_Aijala2017	Crippa_2014	Paris winter Crippa13	OOABB Finokalia	IEPOX-OA	SOAb-pinene	SV-OOA15-16		
SV-OOA	29.8	21.1	33.7	15.6	25.3	32	12.9		
	Hyytiala_Aijala2017	Crippa_2014	Paris winter Crippa13	LVOOAavg Ng11	Zurich winter Lanz	OOA Finokalia	OOA15-16		
LV-OOA	44.6	13.4	39.3	20.3	23.4	4.2	3.6		

Rejected solution

	Hyytiala_Aijala2017	Crippa_2014	Paris Winter Crippa13	HOA avg Ng11	Zurich Winter Lanz	HOA15-16			
HOA	10.7	4.4	5.6	2.1	11.5	2.5			
	Hyytiala_Aijala2017	Paris Winter Crippa13	MeatCharbroiling2	MeatCharbroiling3	COA15-16				
COA	18.2	6.9	14.4	14.7	3.2				
	Crippa_2014	Paris winter Crippa13	BBOAavg Ng11	Zurich Winter Lanz	Oak Schneider	Spruce Schneider	Kostenidou_olive	BBOA Finokalia	BBOA15-16
BBOA	17.8	27.4	10.5	22.2	17.8	20.3	16.8	26.4	12.9
	Hyytiala_Aijala2017	Crippa_2014	Paris winter Crippa13	OOABB Finokalia	IEPOX-OA	SOAb-pinene	SV-OOA15-16		
SV-OOA	37.2	24.2	40.1	13.6	30.1	38.9	14.1		
	Hyytiala_Aijala2017	Crippa_2014	Paris winter Crippa13	LVOOAavg Ng11	Zurich winter Lanz	OOA Finokalia	OOA15-16		
LV-OOA	43.8	12.7	38.6	19.4	22.6	3.8	4.1		

	Hyytiala_Aijala2017	Crippa_2014	Paris Winter Crippa13	HOA avg Ng11	Zurich Winter Lanz	HOA15-16			
HOA	9.7	4.6	5.5	2.8	11.7	3.4			
	Hyytiala_Aijala2017	Paris Winter Crippa13	MeatCharbroiling2	MeatCharbroiling3	COA15-16				
COA	18.1	6.9	14.5	14.9	3.3				
	Crippa_2014	Paris winter Crippa13	BBOAavg Ng11	Zurich Winter Lanz	Oak Schneider	Spruce Schneider	Kostenidou_olive	BBOA Finokalia	BBOA15-16
BBOA	19.7	28.6	12.5	23.6	18.2	20.4	17.2	27.7	13.2
	Hyytiala_Aijala2017	Crippa_2014	Paris winter Crippa13	OOABB Finokalia	IEPOX-OA	SOAb-pinene	SV-OOA15-16		
SV-OOA	40.7	28.2	43.8	16.6	34	43.1	18.4		
	Hyytiala_Aijala2017	Crippa_2014	Paris winter Crippa13	LVOOAavg Ng11	Zurich winter Lanz	OOA Finokalia	OOA15-16		
LV-OOA	43.2	12	38.2	18.8	21.9	3.5	4.7		

Apart from their affinity to reference mass spectra, factors of the derived solutions were also compared to external time series in order to conclude and select the most reasonable solution. The results of the comparison with the external time series are the respective ones of the solutions provided just above for the reference mass spectra. Numbers represent the squared Pearson correlation coefficient R^2 between the PMF factors time series and external time series while correlations higher than 50% are in bold.

Winter 2017 selected solution with the respective correlation coefficients:

Timeseries	nss-K	CO	BCtot	BCwb	BCff	NO3	SO4	NH4	Chl	NO	m/z60	m/z73
HOA	0.36	**0.54**	**0.53**	0.34	0.42	0.42	0.15	0.32	0.49	**0.55**	0.36	0.44
COA	0.32	0.22	0.23	0.18	0.11	0.17	0.07	0.11	0.27	0.13	0.29	0.34
BBOA	**0.62**	**0.52**	**0.58**	**0.78**	0.19	0.44	0.13	0.21	**0.53**	0.34	**0.94**	**0.9**
LV-OOA	**0.52**	0.43	0.46	0.24	0.28	**0.63**	0.39	**0.62**	0.47	0.23	0.48	**0.51**
SV-OOA(BB)	**0.61**	**0.61**	**0.66**	**0.82**	0.26	0.44	0.16	0.26	**0.67**	0.43	**0.99**	**0.99**

Rejected solutions:

Timeseries	nss-K	CO	BCtot	BCwb	BCff	NO3	SO4	NH4	Chl	NO	m/z60	m/z73
HOA	0.36	**0.54**	**0.53**	0.36	0.41	0.42	0.3	0.27	0.49	**0.54**	0.36	0.45
COA	0.33	0.21	0.22	0.17	0.11	0.17	0.07	0.11	0.27	0.13	0.29	0.34
BBOA	**0.62**	0.47	**0.52**	**0.66**	0.21	0.42	0.15	0.26	0.49	0.3	**0.85**	**0.79**
LV-OOA	**0.54**	0.35	0.39	0.29	0.28	**0.62**	0.39	**0.59**	0.19	0.22	0.32	0.34
SV-OOA(BB)	**0.57**	**0.59**	**0.63**	**0.74**	0.31	0.47	0.16	0.31	**0.68**	0.42	**0.98**	**0.99**

Timeseries	nss-K	CO	BCtot	BCwb	BCff	NO3	SO4	NH4	Chl	NO
HOA	0.32	**0.56**	**0.53**	0.4	0.45	0.33	0.21	0.28	**0.53**	0.45
COA	0.32	0.25	0.26	0.19	0.15	0.21	0.11	0.14	0.34	0.17
BBOA	**0.55**	**0.53**	**0.58**	**0.76**	0.23	0.34	0.12	0.21	**0.51**	0.35
LV-OOA	0.34	0.18	0.19	0.1	0.18	**0.5**	0.3	**0.51**	0.16	0.15
SV-OOA(BB)	**0.58**	**0.68**	**0.72**	**0.78**	0.38	0.45	0.2	0.3	**0.69**	0.46

Winter 2015 selected solution with the respective correlation coefficients:

Timeseries	CO	BCtot	BCwb	BCff	NO3	SO4	NH4	Chl	mz60
HOA	0.52	0.47	0.27	0.49	0.21	0.11	0.21	0.29	0.3
COA	0.33	0.28	0.34	0.19	0.17	0.08	0.18	0.25	0.42
BBOA	0.36	0.51	0.82	0.26	0.44	0.15	0.35	**0.71**	**0.94**
LV-OOA	0.36	0.27	0.52	0.21	0.44	0.27	0.44	0.39	0.59
SV-OOA(BB)	0.38	0.52	0.8	0.34	0.5	0.24	0.47	**0.64**	**0.96**

Winter 2013 selected solution with the respective correlation coefficients:

Timeseries	nss-K	NO	BCtot	BCwb	BCff	NO3	SO4	NH4	Chl	m/z60	m/z73
HOA	**0.57**	0.43	**0.56**	0.42	0.49	0.34	0.03	0.33	**0.58**	**0.53**	**0.52**
COA	0.28	0.06	0.17	0.34	0.06	0.17	0.02	0.18	0.27	0.32	0.4
BBOA	**0.52**	0.14	0.29	**0.53**	0.06	0.46	0.05	0.37	0.49	**0.56**	**0.52**
LV-OOA	**0.68**	0.26	**0.52**	**0.63**	0.32	**0.71**	0.28	**0.71**	**0.68**	**0.78**	**0.77**
SV-OOA(BB)	**0.76**	0.34	**0.56**	**0.69**	0.33	0.33	0.02	0.34	**0.81**	**0.98**	**0.96**

Rejected solutions:

Timeseries	nss-K	NO	BCtot	BCwb	BCff	NO3	SO4	NH4	Chl	m/z60	m/z73
HOA	0.26	0.3	0.33	0.28	0.27	0.27	0.02	0.28	0.47	0.36	0.51
COA	0.19	0.09	0.21	0.35	0.08	0.17	0.02	0.19	0.29	0.37	0.41
BBOA	0.45	0.22	0.35	0.5	0.17	0.38	0.03	0.37	0.7	**0.56**	**0.76**
LV-OOA	0.31	0.14	0.4	0.47	0.25	**0.7**	0.15	**0.68**	0.42	**0.66**	**0.58**
SV-OOA(BB)	0.48	0.33	**0.56**	**0.68**	0.33	0.33	0.02	0.34	**0.8**	**0.98**	**0.97**

Timeseries	nss-K	NO	BCtot	BCwb	BCff	NO3	SO4	NH4	Chl	m/z60	m/z73
HOA	**0.54**	0.44	**0.54**	0.44	0.48	0.34	0.02	0.33	**0.58**	0.39	**0.53**
COA	0.28	0.09	0.19	0.32	0.08	0.16	0.01	0.18	0.28	0.36	0.41
BBOA	**0.62**	0.24	0.39	**0.54**	0.19	0.33	0.02	0.33	**0.72**	**0.81**	**0.83**
LV-OOA	0.46	0.13	0.39	0.48	0.26	**0.71**	0.16	**0.68**	0.4	**0.65**	**0.55**
SV-OOA(BB)	**0.78**	0.34	**0.58**	**0.68**	0.34	0.34	0.02	0.36	**0.81**	**0.98**	**0.98**