**We appreciate the referee's valuable comments and thoughts on our paper. We have carefully revised the manuscript by taking account of the comments. Our responses to the specific comments are given below.**

**Responses to the comments of Referee#1:**

*Comment 1*: My main concern is with the interpretation of the PMF analysis in section 3.4 of the manuscript. I do not fully agree with the classification of the three factors extracted from this analysis. For example, factor 3 is described as anthropogenically more influenced/photochemically less aged. However, the biogenic markers isoprene and pinene are dominant contributions to this factor. While the lack of oxidation products of biogenic precursors indicate photochemically less aged air, there is also a substantial contribution of secondary inorganic aerosol (sulfate and nitrate). Overall, I do not agree that the PMF analysis allows an interpretation of the three factors in a two-dimensional space of anthropogenic influence and photochemical age. This challenges the following discussions in section 3.4 and Figure 9, and thus, one of the main conclusions of the manuscript - the enhanced formation of biogenic SOA due to the inflow of anthropogenic precursors and aerosols.

***Reply 1:***

**We have used the term "photochemically more/less aged" from viewpoints of the degree of atmospheric processing of biogenic precursors. Our measurements indicated that the biogenic precursors were emitted mainly from the local forest, whereas the observed secondary inorganic aerosol (sulfate and nitrate) were transported from regions outside the forest site. This might result in the difference in the degree of photochemical processing between biogenic precursors/SOA and inorganic aerosols observed at the site. Moreover, relative influence of anthropogenic sources on factor 1 and 2 is important to interpret possible factors that control formation of the observed biogenic SOA tracers in this study. In order to clarify this point, a category of "*photochemically more/less aged*" has been changed to "*more/less processed biogenic VOCs.*" (Page 13, Lines 11-16)**

**With regard to the PMF, we have now added a subsection (2.5) that provides the details of our PMF analyses. The new subsection includes descriptions on how we determined the numbers of interpretable factors. (Page 7, Line 26- Page 8 Line 6)**

*Comment 2*: With respect to relaxed eddy accumulation (p. 10745): Did the authors apply a wind deadband for REA sampling? Did the authors use the averaged *b* value mentioned in the manuscript, or the instant b value calculated from equation (2) in each individual 1 hour interval?

***Reply 2:***

**Yes, we used a dynamic deadband which was determined from the latest 15-min running mean and standard deviation of the vertical wind velocity. An averaged value of the coefficient *b* during the whole measurement period was calculated as the slope of *w'T'* against $\sigma_w(T^+ - T^-)$. We have added descriptions as follows.**

**"*$C^+$ and $C^-$ are the VOC concentrations in the upward and downward air, respectively, collected when the absolute value of the measured vertical wind speed is higher than a dynamic deadband value (Mochizuki et al., 2014).*" (Page 5, Lines 7-10)**

**Taking account of the comment, the sentence "*An averaged value of the coefficient b was determined to be 0.38 ($r^2 = 0.98$).*" has been revised to "*The averaged value of the coefficient b during the whole measurement period was determined to be 0.38 ($r^2 = 0.98$), which was calculated as the slope of w'T' against $\sigma_w(T^+ - T^-)$.*" (Page 5, Lines 15-17)**

*Comment 3*: With respect to the ozone and $NO_x$ profile measurements (p. 10747): Did the authors check the response time of the trace gas analyzers in combination with the sampling lines of the profile system, and discard data just after switching the valves? How fast is the air in the sampling lines exchanged? In a similar setup with the same type of analyzers, I would expect that data at least within 60 to 90 s after switching the valves must be discarded. In addition, it would be very interesting to discuss the concentrations of NO and $NO_2$ separately instead of total $NO_x$, especially when classifying air masses according to photochemical age.

***Reply 3:***

**At our study site, we checked the response time of the ozone and $NO_x$ analyzers including the whole inlet system, and discarded 150-sec data for these gases just after switching the solenoid valves. This is based on our experimental test, which showed that it took approximately 40 sec for the air in the sampling lines to be exchanged. In the revised manuscript, we have added this information to the text in section 2.4:**
**"*On the basis of the response time for $O_3$ and $NO_x$ analyzers in combination with the sampling lines, we discarded 150-sec data for these gases just after switching the solenoid valves.*" (Page 7, Lines 23-25)**

**The timescale of interconversion between NO and $NO_2$ is typically ~100 s during the daytime. This timescale is comparable to that of the turbulent mixing within and out of a forest canopy, but is much faster than that of chemical processing of biogenic precursors to form SOA discussed here (~a few hours). Therefore NO/$NO_2$ might not be a proper indicator for classifying air masses according to photochemical age in this case.**

*Comment 4*: Can the authors explain the clear change in benzene and toluene concentrations between 7/15 and 7/16 in Figure 3c? On 7/15, benzene concentrations are clearly higher than toluene, while toluene concentrations are typically higher on other days.

***Reply 4:***
**Toluene to benzene (T/B) ratio has been commonly used as an indicator of traffic emissions. The T/B ratios observed during the study period beside July 15 indicates that they are emitted predominantly by motor vehicle-related sources. Previous studies reported that benzene concentration in flue gases increases as a result of incomplete combustion. Although it is not clear from the local wind direction, the lower T/B ratio with higher benzene concentrations on July 15 may be mainly due to the dominant contribution of various fuels such as fuel-oil, diesel, etc.**
**Because the detailed information about the sources of benzene and toluene is not directly linked with our discussion in this paper, we have not added any statement on the different behavior of benzene and toluene.**

*Comment 5*: The authors suggest that the diurnal cycles of 2-MGA and 2-MTLs follow the diurnal cycle of isoprene, thus indicating local production of isoprene-derived organic aerosol (p. 10751). Is the estimated timescale for 2-MGA and 2-MTLs production from isoprene oxidation consistent with this interpretation? What is the estimated timescale for 3-MBTCA production from alpha-pinene oxidation? Is it sufficiently long to expect a difference in the diurnal peaks of alpha-pinene and its oxidation products, as stated on p. 10752?

***Reply 5:***
**The lifetime of isoprene is estimated to be ~1.7 h at 25°C assuming the typical OH concentration of $1.5\times10^{6}$ molecules $cm^{-3}$. Previous laboratory experiments showed that the timescale for 2-MGA and 2-MTLs production from isoprene oxidation is**

**several hours (e.g., Surratt et al., 2010), which is comparable to the sampling duration (~3 h) during the daytime in this study.**

**With regard to the production of 3-MBTCA from α-pinene, the timescale of the production (> ~3 h) shown by laboratory experiments (e.g., Eddingsaas et al., 2012, Kristensen et al., 2013) is longer than the sampling time during the daytime in the current study. This can explain the difference in the diurnal peaks of α-pinene and its oxidation products in aerosols observed in this study.**

**Taking account of the comment, the following sentences have been added in section 3.2 and 3.3.**

**section 3.2.: "*Laboratory experiments showed that the timescale for 2-MGA and 2-MTLs production from isoprene oxidation is a few hours (e.g., Surratt et al., 2010). This timescale is comparable to the sampling duration (~3 h) during the daytime in this study, which is consistent with the similar temporal trend of the concentrations of isoprene, 2-MGA and 2-MTLs.*" (Page 11, Lines 24-28)**

**section 3.3.: "*With regard to the production of 3-MBTCA by OH-initiated oxidation of α-pinene, the timescale of the 3-MBTCA formation (> ~3 h) shown by laboratory experiments (e.g., Eddingsaas et al., 2012, Kristensen et al., 2013) is longer than the sampling time during the daytime in the current study.*" (Page 12, Lines 22-25)**

*Comment 6*: The content and structure of the Abstract and the Conclusions section are basically identical. Please revise the Conclusions section and put the main results and conclusions in a broader context!

***Reply 6:***

**According to the comment, we have revised the conclusions section as follows.**

***"We measured concentrations and canopy-scale fluxes of isoprene and α-pinene simultaneously with their oxidation products in total suspended particles (TSP) at a Larix kaempferi forest site in summer. Isoprene and α-pinene accounted for 23% and 44%, respectively, of the total terpenoids measured in this study. Vertical and diurnal profiles of isoprene and MACR+MVK suggest large emissions of isoprene near the forest floor, which is likely due to Dryopteris crassirhizoma, followed by reaction of the isoprene within the L. kaempferi canopy. The concentrations of α-pinene also showed peaks near the forest floor with maximums in the early morning and late afternoon, suggesting significant emissions of α-pinene from soil and litter in addition to emissions from leaves at the forest site.***

***Isoprene and its oxidation products in aerosols exhibited similar diurnal variations within the forest canopy, providing an evidence of SOA formation within a timescale of a few hours via oxidation of isoprene emitted from Dryopteris crassirhizoma on the forest floor. PMF analysis indicated that anthropogenic inflow likely contributed to the enhanced concentrations of both isoprene-derived (>64%) and α-pinene-derived (>57%) SOA within the forest canopy. The combined analyses of the fluxes and vertical profiles of BVOCs suggest that the BSOA formation promoted by the anthropogenic inflow was enhanced within the forest canopy even though the BVOC fluxes were relatively low. This study emphasizes an importance of intra-canopy processes for biogenic SOA formation in the presence of significant inflow of oxidants as well as anthropogenic aerosols and their precursors.***

*Comment 7*: p.10744, line 19: define greek phi symbol

**The words "φ1/4 inch ×3.5 inch" have been changed to "88.9 mm long, 6.35 mm outer diameter" (Page 4, Lines 25-26)**

p. 10745, line 4: define SD

**Now "SD" has been defined as "standard deviation." (Page 5, Line 7)**

p. 10748, line 23: replace "suggsted" by "suggested"

**Corrected as suggested. (Page 9, Line 10)**

p. 10750, line 23: add "a" between "reported for" and "Pinus sylvestris": "...reported for a *Pinus sylvestris* forest..."

**Revised as suggested. (Page 10, Line 29)**

p. 10751, line 26: What exactly do you mean by "atmospheric reactivity for isoprene"

**The phrase "atmospheric reactivity for isoprene" has been replaced by "the reactivity of isoprene to form OAs" (Page 12, Lines 2-3)**

p. 10752, line 26: What exactly do you mean by "atmospheric reactivity of alpha pinene"

**The phrase "atmospheric reactivity for α-pinene" has been replaced by "reactivity of α-pinene to form OAs." (Page 13, Lines 3-4)**

**References**

**Kleindienst, T. E., Lewandowski, M., Offenberg, J. H., Jaoui, M., and Edney, E. O.: Ozone-isoprene reaction: Re-examination of the formation of secondary organic aerosol, Geophys. Res. Lett., 34, L01805, doi:10.1029/2006GL027485, 2007. (Page 19, Line 17-19)**

**Eddingsaas, N. C., Loza, C. L., Yee, L. D., Chan, M., Schilling, K. A., Chhabra, P. S., Seinfeld, J. H., and Wennberg, P. O.: α-pinene photooxidation under controlled chemical conditions – Part 2: SOA yield and composition in low- and high-NOx environments, Atmos. Chem. Phys., 12, 7413-7427, 2012. (Page 16, Line 26-29)**

**Kristensen, K., Enggrob, K. L., King, S. M., Worton, D. R., Platt, S. M., Mortensen, R., Rosenoern, T., Surratt, J. D., Bilde, M., Goldstein, A. H., and Glasius, M.: Formation and occurrence of dimer ester of pinene oxidation products in atmospheric aerosols, Atmos. Chem. Phys., 13, 3763-3776, 2013. (Page 19, Line 22-25)**

**We appreciate the referee's valuable comments and thoughts on our paper. We have carefully revised the manuscript by taking account of the comments. Our responses to the specific comments are given below.**

**Responses to the comments of Referee#2:**

*Comment 1*: Sampling Size: I would argue that this sampling period is rather limited. Do the authors worry at all that this is providing a very narrow window into what occurs at this site? How do you know this time is optimal for studying this chemistry at this site? It is unclear why this period was selected. This seems to be a major weakness of this study.

***Reply 1*:**

**Our previous study on the annual measurements of biogenic VOC fluxes showed that the fluxes were largest in July and August at the same study site (Mochizuki et al., 2014). On the basis of that study, we made the flux and VOC measurements as well as aerosol samplings during the period of 8 days in the current study. We have selected these specific 5 days for the ambient measurements, because some contrast of biogenic VOC emissions and subsequent SOA formation were expected to be observed in terms of photochemical activity and anthropogenic influence. Taking account of the referee's comments, we have mentioned the sampling period in the revised manuscript (section 2.1): "*Our previous study reported the annual measurements of biogenic VOC fluxes at the same site, which showed that the fluxes were largest in July and August (Mochizuki et al., 2014). The specific 5 days were selected for the ambient measurements, because some contrast of BVOC emissions and subsequent SOA formation were expected to be observed in terms of photochemical activity and anthropogenic influence. Although the measurements focused on the events over a 5-day period, the data were obtained under typical meteorological conditions at this study site in summer.*" (Page 4, Lines 15-21)**

*Comment 2*: Experimental Section: There clearly needs to be a subsection within the experimental section and likely corresponding SI section that provides the details of your PMF analyses. There is no way for the reader to know how well you conducted your PMF and why you ended up selecting 3 factors. Why not 4 or 5 or more? This absolutely needs to be included in a revised submission. How do we know if this PMF means anything, considering this is a statistical solution?

***Reply 2*:**

**According to the comment, we have now added a subsection 2.5 that provides the details of our PMF analyses.**

“***To investigate factors controlling the formation of biogenic SOA at the study site, we conducted a positive matrix factorization (PMF) (Paatero and Tapper, 1994). The PMF analysis was performed using the concentration values for the measured 17 gas/aerosol species including VOCs and organic tracer compounds as well as inorganic species in aerosols. The sum of the analytical uncertainty and one third of the detection limit values as the overall uncertainty to each input parameter. To find the number of sources, we have tested different number of sources (three to five) and found the optimal one with the most physically reasonable results. In this study, the number of sources was determined to be three to discuss factors controlling the formation of 2-MTLs and 3-MBTCA. These factors are discussed in section 3.4.***” **(Page 7, Line 26 - Page 8, Line 6)**

**Along with this, we have deleted the following sentences at the beginning of section 3.4.**
“***To investigate the factors controlling biogenic SOA formation at the study site, we conducted a positive matrix factorization (PMF) (Paatero and Tapper, 1994). The PMF analysis was performed for the collected samples including VOCs and tracer compounds as well as inorganic species in aerosols. The PMF analysis resulted in the deduction of three interpretable factors.***”

*Comment 3*: SOA tracer analyses: How were the isoprene- and alpha-pinene-derived SOA tracers quantified? Ideally, authentic standards are preferable, as is starting to be done by other groups (Surratt, Claeys, Keutsch or Geiger groups). If ketopinic acid was used based on the Kleindienst et al. (2007, Atmos. Environ.), I don’t think this is a good standard to use for all compounds and could affect the quantification reported here. The authors need to clarify. In a revised manuscript details of identification, quantification and how this was done is absolutely needed.

***Reply 3*:**
**According to the comment, we have made additional statement on the details of identification and quantification of the tracer compounds as follows.**
“***Individual compounds were identified by comparison of mass spectra with those of authentic standards or literature data. For the quantification of pinonic, pinic, and 3-hydroxyglutalic acids, their GC-MS response factors were determined using authentic standards. The standards were purchased from Sigma Aldrich and Wako Wako Pure Chemical. 2-Methylglyceric acid and 2-methyltetrols were quantified using the response factor of meso-erythritol, whereas 3-methyl-1,2,3- butanetricarboxylic and 3-hydroxyglutaric acids were estimated using the response factors of pimelic and malic acids, respectively.***” **(Page 6, Line 27 - Page 7, Line 2)**

*Comment 4*: Aerosol Sampling:
I have several questions about the aerosol sampling:
a.) TSP is not ideal, especially in terms of size cuts. Most of the BSOA will be in the fine mode, so it isn't clear to me why TSP sampling was selected here?

***Reply 4-a*:**
**Our previous study showed that that a nonnegligible fraction of the BSOA mass resided in the coarse mode ($D_p$ > 2.5 µm) in some cases observed at the forest site (e.g., pinonic acid, 2-MTLs) (Miyazaki et al., 2014). In order to collect the total mass of BSOA tracers discussed in the manuscript, we have sampled the TSP. Taking account of the referee's comment, we have added the following sentences in section 2.3.**
**"*Our previous study showed that some of the BSOA mass resided in the coarse mode observed at the forest site (e.g., pinonic acid, 2-methyltetrols (2-MTLs)) (Miyazaki et al., 2014). In order to collect the total mass of the BSOA tracers, we sampled the TSP in the current study.*" (Page 6, Lines 4-7)**

b.) Precombustion of filters at 450°C for 6 hours may not be long enough. Why did the authors not consider higher temps (550°C) for 12 hours or longer? In addition, with TSP sampling, are the authors worried about any potential artifacts from gas-phase absorption or evaporation of semivolatiles? This issue needs to be addressed here. Why wasn't $PM_{2.5}$ considered?

***Reply 4-b*:**
**We have analyzed our field blank filters for quality assurance. In fact, target organic compounds discussed in this study were not detected in the blanks. This supports that the time for the precombustion of filters at 450°C (6 hours) is long enough to avoid any contamination of filters on the target compounds under our analytical condition.**
**As the referee pointed out, the quartz fiber filters may adsorb gas phase compounds, causing positive artifacts. On the other hand, semi-volatile compounds collected on the filter may evaporate, which may result in negative artifacts. These artifacts are possible for any filter-based measurements. With regard to these possible artifacts, we have added the following sentences in section 2.3.**
***"It is noted that the quartz fiber filters may adsorb gas-phase compounds, which may cause an overestimate of the mass of the target compound (positive artifacts). On the other hand, it is possible that semi-volatile compounds collected on the filter may evaporate, which may underestimate the mass of the target compound (negative artifacts). However, it is difficult to quantify these effects for ambient conditions in the current***

***study."*** **(Page 6, Lines 13-17)**

***"Additionally, field blank filters were analyzed for quality assurance. The target organic compounds discussed in this paper were not detected in the blanks."*** **(Page 7, Line 2-4)**

*Comment 5*: Discussion of known mechanism of SOA formation and how this relates to acidity and $NO_x$ is lacking:
I'm surprised there was no mention of the likely importance of isoprene epoxydiols (IEPOX) formed under $HO_2$-dominante conditions (Surratt et al., 2010, PNAS: Lin et al., 2012, ES&T; Lin et al., 2014, ES&T; Nguyen et al., 2014, PNAS; Gaston et al., 2014, ES&T; Riedel et al., 2015, ES&T Letters). It has been shown that the presence of wet acidic sulfate seed aerosol controls the uptake of IEPOX in forming SOA, including the 2-MTs. I'm curious to know why the authors didn't consider calculating aerosol acidity using their inorganic aerosol data and met data using one of the available thermodynamic models, such as ISOROPPIA II (Guo et al., 2014, ACP) from Thanos Nenes group at GA Tech. You could explore how acidity correlates to these compounds. In addition, how does these compounds correlate to sulfate levels?

***Reply 5*:**
**According to the referee's comment, we have added the following sentences in section 3.4.**
**"*Recent studies have suggested that 2-MTLs can be formed via reactions of reactive intermediates, isoprene epoxydiols (IEPOX) (e. g., Surrat et al., 2010, Lin et al., 2014). It has been shown that isoprene SOA is enhanced in the presence of acidified sulfate seed aerosol, where acid-catalyzed particle-phase reactions increase the uptake of IEPOX (e. g., Surrat et al., 2010, Lin et al., 2014). In order to examine the effects of aerosol acidity on the formation of 2-MTLs, we measured pH in the water-extracted samples (section 2.3) which offers insights into the aerosol acidity. The resulting pH of the water-extracted samples ranged from about 4.2 to 6.4, indicating that the observed aerosols were generally acidic. The 2-MTLs concentrations showed a negative correlation with pH ($r^2$ = 0.45) and a positive correlation with the $SO_4^{2-}$ concentrations ($r^2$ = 0.31). This relation between 2-MTLs and indicators of the acidity supports that the aerosol acidity likely contributed to the formation of 2-MTLs at the forest site.*" (Page 14, Lines 5-16)**
**In this context, the following sentences have been also added to the text: "*The quartz fiber filters were also used to determine pH in the water-extracted aerosol samples. A portion of the filter was extracted with 30-ml ultrapure water. The pH of the water extracts was measured with a Horiba D-21 pH meter using an electrode (Miyazaki et al., 2014).*" (Page 7, Lines 11-13)**

*Comment 6*: Discussion of relevant new pathways related to alpha-pinene SOA:
I suspect ozone chemistry might explain your higher levels of alpha-pinene SOA. If so, how do your results fit into the context of recent work on ELVOC chemistry (Ehn et al., 2014, Nature)? It is now thought that ELVOC chemistry explains most of the SOA mass from alpha-pinene + $O_3$.
Related to this, based on your ozone measurements at the site, do you expect the lifetime of alpha-pinene to be shorter with $O_3$ than with OH? You should consider at least doing a back-of-the-envelope calculation.

***Reply 6*:**
**Recent studies showed that ELVOC and 3-MBTCA are formed via different reaction pathways originating from α-pinene. Because the ELVOC are shown to form at significant mass yield, the formation of 3-MBTCA via OH and $O_3$ reactions with α-pinene is likely linked with the formation of ELVOC via reactions of α-pinene with $O_3$. Although we have not discussed the total amount of SOA in this paper, the observed increase in the 3-MBTCA and $O_3$ levels on 10 and 17 July indicates that the formation of ELVOC and their contribution to the total SOA mass were likely significant.**
**Taking account of the referee's comment, we have added sentences in section 3.4.**
**"*More recently, Ehn et al. (2012, 2014) and Schobesberger et al. (2013) have observed highly oxidized multifunctional organic compounds (i.e., extremely low-volatility organic compounds (ELVOCs)) based on laboratory experiments and ambient measurements at a boreal forest site. ELVOCs can be formed by the ozonolysis of α-pinene. Because the ELVOCs are shown to form at significant mass yield, the formation of 3-MBTCA via OH and $O_3$ reactions with α-pinene is likely linked with the formation of ELVOCs. Although we have not discussed the total amount of SOA in this study, the observed increase in the 3-MBTCA and $O_3$ levels on 10 and 17 July indicates that the formation of ELVOC and their contribution to the total SOA mass were expected to be significant.*" (Page 15, Lines 1-10)**

**The lifetime of α-pinene with OH is estimated to be ~3.4 h at 25°C assuming the OH concentration of $1.5\times10^6$ molecules $cm^{-3}$. Meanwhile, the lifetime of α-pinene with $O_3$ is ~4.6 h based on our $O_3$ measurement data (~30 ppb). Description on this simple estimation has been also added to the text. (Page 12, Lines 16-18)**

**We have added the following papers to the reference list.**

**Reference**

**Lin, Y. H., Budisulistiorini, S. H., Chu, K., Siejack, R. A., Zhang, H., Riva, M., Zhang, Z., Gold, A., Kautzman, K. E., and Surratt, J. D.: Light-absorbing oligomer formation in secondary organic aerosol from reactive uptake of isoprene epoxydiols, Environ. Sci. Technol., 48, 12012-12021, 2014. (Page 20, Line 8-11)**

**Surratt, J. D., Chan, A. W. H., Eddingsaas, N. C., Chan, M., Loza, C. L., Kwan, A. J., Hersey, S. P., Flagan, R. C., Wennberg, P. O., and Seinfeld, J. H.: Reactive intermediates revealed in secondary organic aerosol formation from isoprene, PNAS, 107(15), 6640-6645, 2010. (Page 22, Line 7-9)**

**Ehn, M., Thornton, J. A., Kleist, E., Sipilä, M., Junninen, H., Pullinen, I., Springer, M., Rubach, F., Tillmann, R., Lee, B., Lopez-Hilfiker, F., Andres, S., Acir, I. H., Rissanen, M., Jokinen, T., Schobesberger, S., Kangasluoma, J., Kontkanen, J., Nieminen, T., Kurtén, T., Nielsen, L. B., Jørgensen, S., Kjaergaard, H. G., Canagaratna, M., Maso, M. D., Berndt, T., Petäjä, T., Wahner, A., Kerminen, V. M., Kulmala, M., Worsnop, D. R., Wildt, J., and Mentel T. M.: A large source of low-volatility secondary organic aerosol, Nature, 506, 476-479, 2014, doi:10.1038/nature13032. (Page 17, Line 10-16)**

**Ehn, M., Kleist, E., Junninen, H., Petäjä, T., Lönn, G., Schobesberger, S., Maso, M. D., Trimborn, A., Kulmala, M., Worsnop, D. R., Wahner, A., Wildt, J., and Mentel, Th. F.: Gas phase formation of extremely oxidized pinene reaction products in chamber and ambient air, Atmos. Chem. Phys., 12, 5113-5127, 2012. (Page 17, Line 6-9)**

**Schobesberger, S., Junninen, H., Bianchi, F., Lönn, G., Ehn, M., Lehtipalo, K., Dommen, J., Ehrhart, S., Ortega, I. K., Franchin, A., Nieminen, T., Riccobono, F., Hutterli, M., Duplissy, J., Almeida, J., Amorim, A., Breitenlechner, M., Downard, A. J., Dunne, E. M., Flagan, R. C., Kajos, M., Keskinen, H., Kirkby, J., Kupc, A., Kürten, A., Kurtén, T., Laaksonen, A., Mathot, S., Onnela, A., Praplan, A. P., Rondo, L., Santos, F. D., Schallhart, S., Schnitzhofer, R., Sipilä, M., Tomé, A., Tsagkogeorgas, G., Vehkamäki, H., Wimmer, D., Baltensperger, U., Carslaw, K. S., Curtius, J., Hansel, A., Petäjä, T., Kulmala, M., Donahue, N. M., and Worsno, D. R.: Molecular understanding of atmospheric particle formation from sulfic acid and large oxidized organic molecules, PNAS, 110(43), 17223-17228, 2013. (Page 21, Line 21-29)**