

1     **In-cloud formation of secondary species in iron-containing**  
2                                     **particles**

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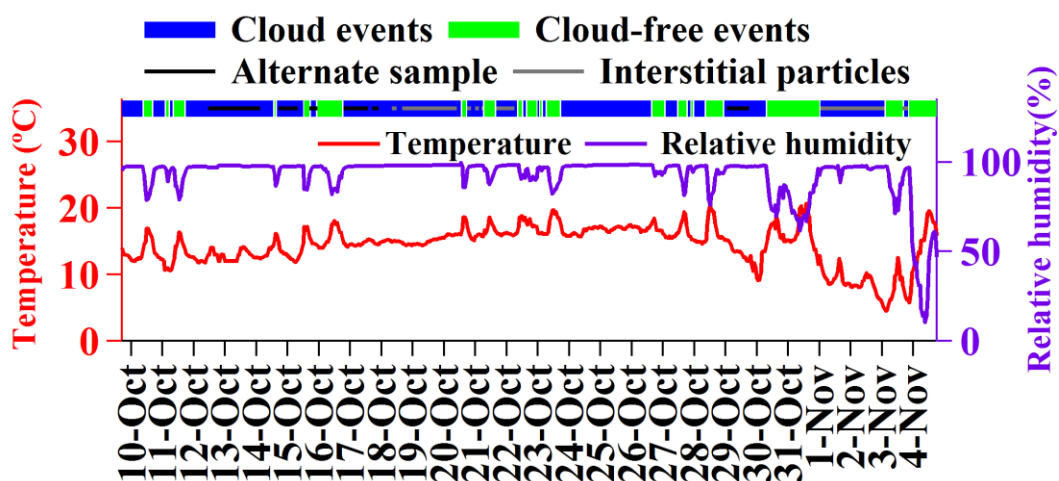
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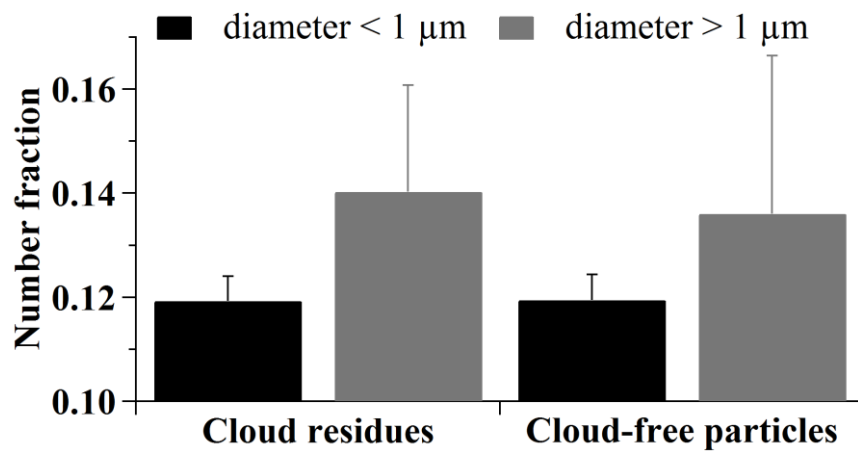
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26 Figure S1. Hourly mean in temperature and relative humidity during the  
 27 study period. The black lines represent the period that GCVI and  $PM_{2.5}$   
 28 inlets alternately sample with an interval of one hour. The  $PM_{2.5}$  inlet (gray  
 29 lines) was only used to correct interstitial particles during cloud processing.

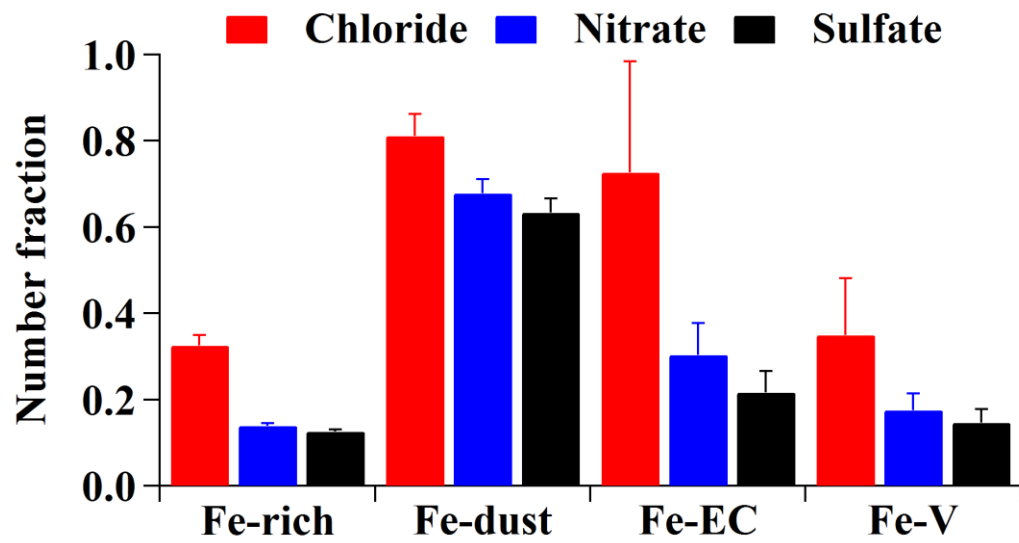
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33 Figure S2. The number fraction of the Fe-dust cloud residues and cloud-

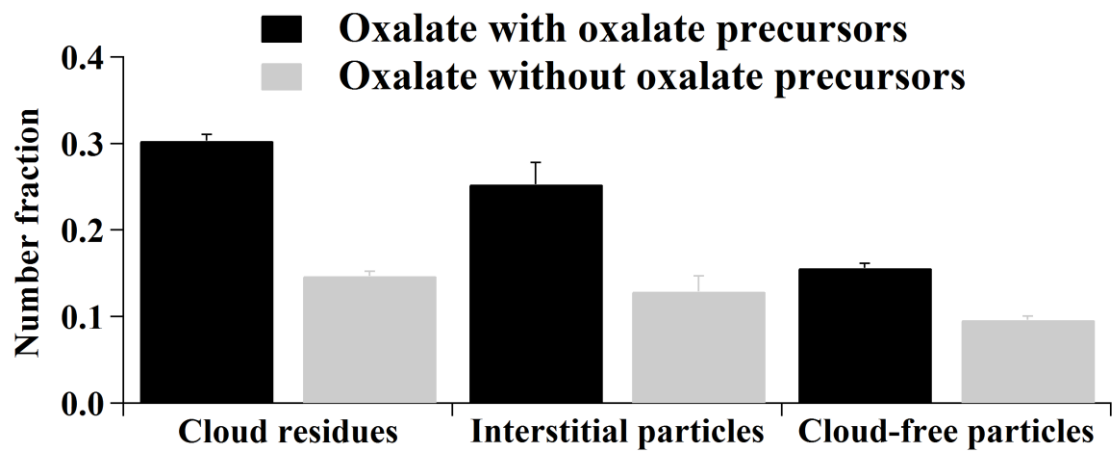
34 free particles in diameter &lt; 1 μm and &gt;1 μm.



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36 Figure S3. Number fractions of chloride, nitrate, sulfate, and oxalate  
37 internally mixed with the Ca-containing particles in the four Fe-containing  
38 cloud residual types.

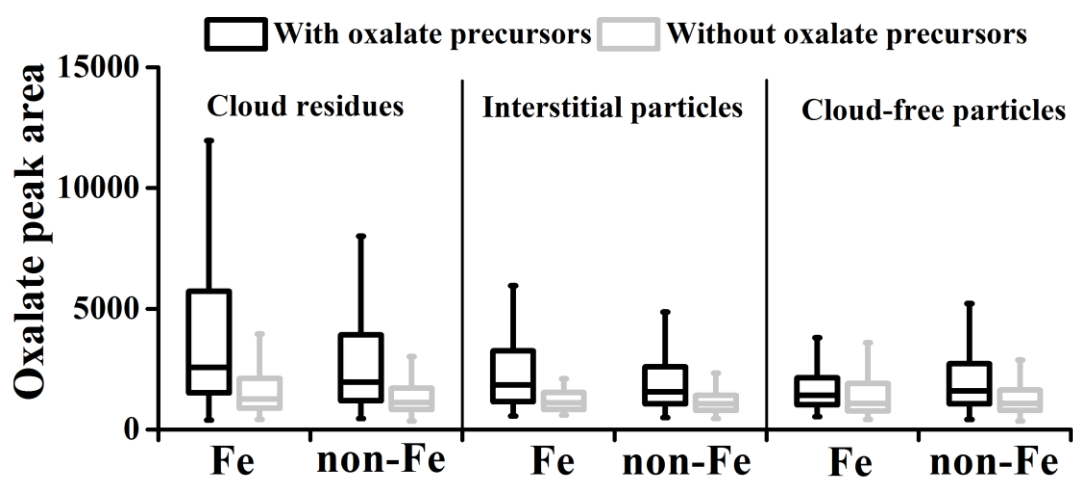
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40 Figure S4. Number fraction of oxalate with and without its precursor in the  
41 Fe-containing cloud residues, interstitial particles, and cloud-free particles.

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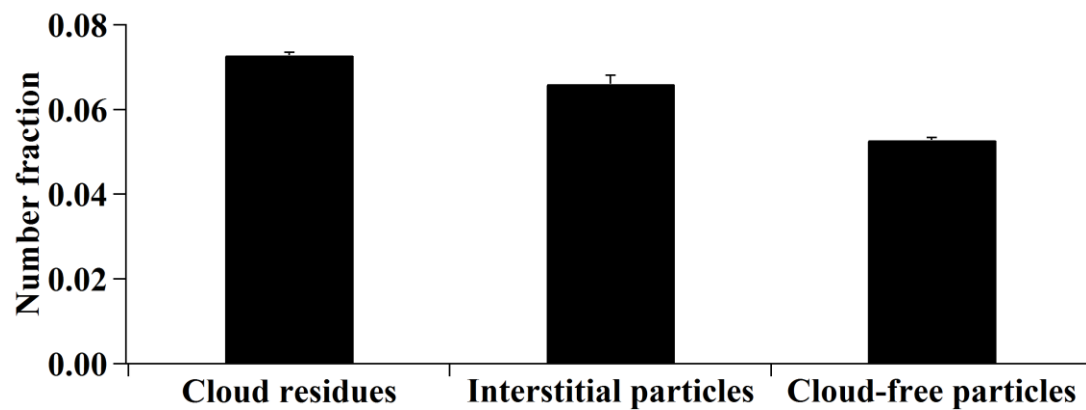


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45 Figure S5. The comparison for oxalate peak area in with and without

46 oxalate precursors.

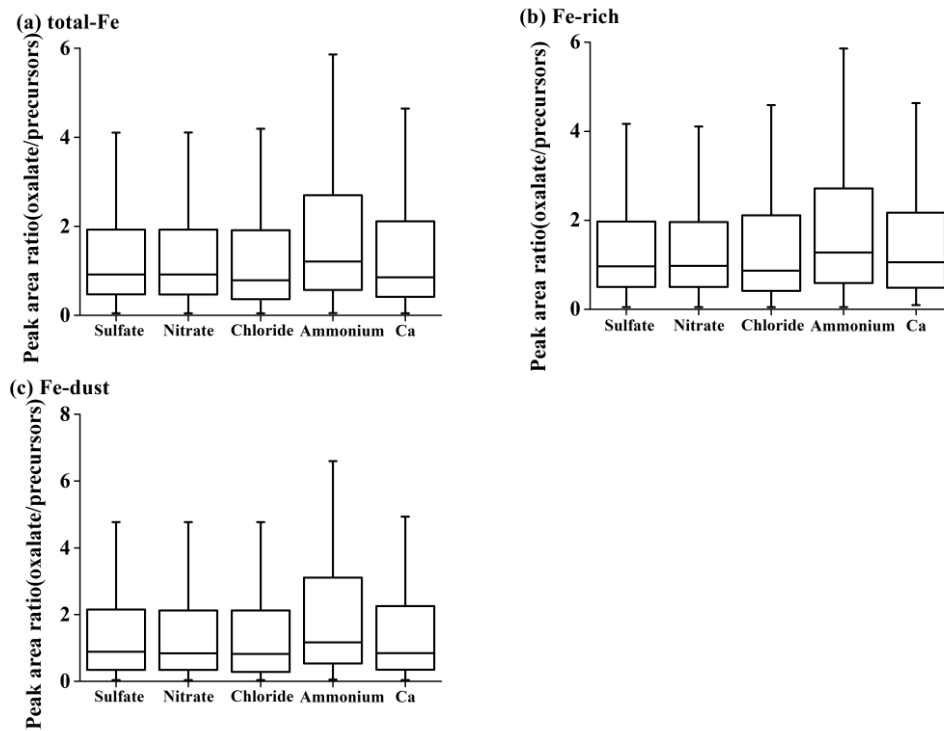
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49 Figure S6. Number fraction of oxalate in the non-Fe cloud residues,  
50 interstitial particles, and cloud-free particles.

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52 Figure S7. Peak area ratio of oxalate to its precursors with sulfate, nitrate,  
 53 chloride, ammonium, and Ca in the Fe-containing cloud residues.