

Environmental Science: Atmospheres

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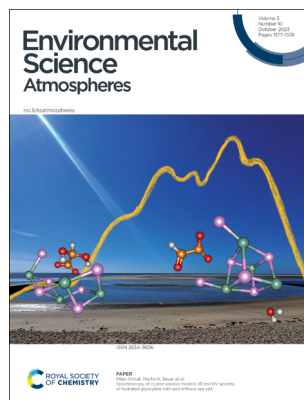
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See Yosuke Sakamoto, Yoshizumi Kajii *et al.*, pp. 1384–1395. Image reproduced by permission of Jiaru Li from *Environ. Sci.: Atmos.*, 2023, 3, 1384.



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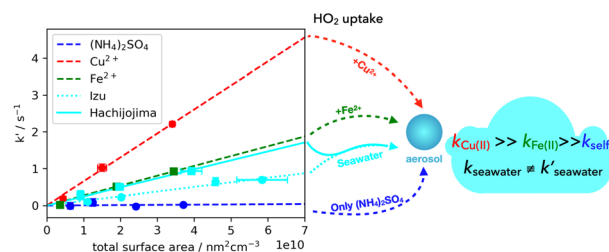
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PAPERS

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Investigation of HO₂ uptake onto Cu(II)- and Fe(II)-doped aqueous inorganic aerosols and seawater aerosols using laser spectroscopic techniques

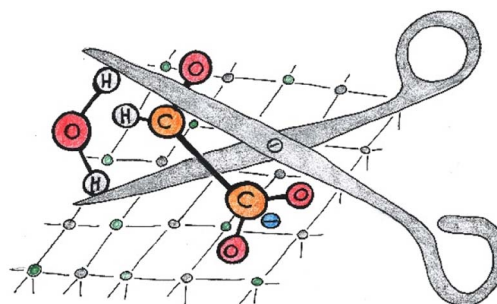
Jiaru Li, Yosuke Sakamoto,* Kei Sato, Yu Morino and Yoshizumi Kajii*



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Spectroscopy of cluster aerosol models: IR and UV spectra of hydrated glyoxylate with and without sea salt

Nina K. Bersenkovitsch, Sarah J. Madlener, Jakob Heller, Christian van der Linde, Milan Ončák* and Martin K. Beyer*



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A possible atmospheric source of HNO_3 : the ammonolysis reaction of $t\text{-N}_2\text{O}_4$ in the presence of water monomer, water dimer, and sulfuric acid

Figure 1: Reaction pathways for the oxidation of NH_3 by $t\text{-N}_2\text{O}_4$.

Line Graph: E_a (kJ/mol) vs. Reaction Coordinate

Reaction Step	Without H_2O (E_a)	H_2O (E_a)	H_2SO_4 (E_a)
$t\text{-N}_2\text{O}_4 + \text{NH}_3 \rightarrow \text{TS}_1$	0.0	0.0	0.0
$\text{TS}_1 \rightarrow \text{TS}_2$	4.4	4.4	4.4
$\text{TS}_2 \rightarrow \text{TS}_3$	3.2	3.2	3.2
$\text{TS}_3 \rightarrow \text{TS}_4$	4.5	4.5	4.5
$\text{TS}_4 \rightarrow \text{TS}_5$	9.1	9.1	9.1
$\text{TS}_5 \rightarrow \text{TS}_6$	14.9	14.9	14.9
$\text{TS}_6 \rightarrow \text{TS}_7$	15.4	15.4	15.4
$\text{TS}_7 \rightarrow \text{TS}_8$	15.4	15.4	15.4
$\text{TS}_8 \rightarrow \text{TS}_9$	15.4	15.4	15.4
$\text{TS}_9 \rightarrow \text{TS}_{10}$	15.4	15.4	15.4
$\text{TS}_{10} \rightarrow \text{TS}_{11}$	15.4	15.4	15.4
$\text{TS}_{11} \rightarrow \text{TS}_{12}$	15.4	15.4	15.4
$\text{TS}_{12} \rightarrow \text{TS}_{13}$	15.4	15.4	15.4
$\text{TS}_{13} \rightarrow \text{TS}_{14}$	15.4	15.4	15.4
$\text{TS}_{14} \rightarrow \text{TS}_{15}$	15.4	15.4	15.4
$\text{TS}_{15} \rightarrow \text{TS}_{16}$	15.4	15.4	15.4
$\text{TS}_{16} \rightarrow \text{TS}_{17}$	15.4	15.4	15.4
$\text{TS}_{17} \rightarrow \text{TS}_{18}$	15.4	15.4	15.4
$\text{TS}_{18} \rightarrow \text{TS}_{19}$	15.4	15.4	15.4
$\text{TS}_{19} \rightarrow \text{TS}_{20}$	15.4	15.4	15.4
$\text{TS}_{20} \rightarrow \text{TS}_{21}$	15.4	15.4	15.4
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$\text{TS}_{22} \rightarrow \text{TS}_{23}$	15.4	15.4	15.4
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$\text{TS}_{33} \rightarrow \text{TS}_{34}$	15.4	15.4	15.4
$\text{TS}_{34} \rightarrow \text{TS}_{35}$	15.4	15.4	15.4
$\text{TS}_{35} \rightarrow \text{TS}_{36}$	15.4	15.4	15.4
$\text{TS}_{36} \rightarrow \text{TS}_{37}$	15.4	15.4	15.4
$\text{TS}_{37} \rightarrow \text{TS}_{38}$	15.4	15.4	15.4
$\text{TS}_{38} \rightarrow \text{TS}_{39}$	15.4	15.4	15.4
$\text{TS}_{39} \rightarrow \text{TS}_{40}$	15.4	15.4	15.4
$\text{TS}_{40} \rightarrow \text{TS}_{41}$	15.4	15.4	15.4
$\text{TS}_{41} \rightarrow \text{TS}_{42}$	15.4	15.4	15.4
$\text{TS}_{42} \rightarrow \text{TS}_{43}$	15.4	15.4	15.4
$\text{TS}_{43} \rightarrow \text{TS}_{44}$	15.4	15.4	15.4
$\text{TS}_{44} \rightarrow \text{TS}_{45}$	15.4	15.4	15.4
$\text{TS}_{45} \rightarrow \text{TS}_{46}$	15.4	15.4	15.4
$\text{TS}_{46} \rightarrow \text{TS}_{47}$	15.4	15.4	15.4
$\text{TS}_{47} \rightarrow \text{TS}_{48}$	15.4	15.4	15.4
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$\text{TS}_{52} \rightarrow \text{TS}_{53}$	15.4	15.4	15.4
$\text{TS}_{53} \rightarrow \text{TS}_{54}$	15.4	15.4	15.4
$\text{TS}_{54} \rightarrow \text{TS}_{55}$	15.4	15.4	15.4
$\text{TS}_{55} \rightarrow \text{TS}_{56}$	15.4	15.4	15.4
$\text{TS}_{56} \rightarrow \text{TS}_{57}$	15.4	15.4	15.4
$\text{TS}_{57} \rightarrow \text{TS}_{58}$	15.4	15.4	15.4
$\text{TS}_{58} \rightarrow \text{TS}_{59}$	15.4	15.4	15.4
$\text{TS}_{59} \rightarrow \text{TS}_{60}$	15.4	15.4	15.4
$\text{TS}_{60} \rightarrow \text{TS}_{61}$	15.4	15.4	15.4
$\text{TS}_{61} \rightarrow \text{TS}_{62}$			

Observed in-plume gaseous elemental mercury depletion suggests significant mercury scavenging by volcanic aerosols

The diagram illustrates the evolution of a volcanic plume over a distance of approximately 38.5 km. It is divided into three stages:

- Entrainment of background GEM:** On the left, a green volcano emits a plume. Red arrows labeled 'GEM' point from the background into the plume, indicating the entrainment of background gas-phase mercury.
- Gas-particle interactions in plume:** The middle section shows the plume's internal processes. Arrows indicate the conversion of GEM to GOM (GEM → GOM) and the formation of particle-bound mercury (PBM) from GEM (GEM → GPM) and GOM (GOM → GPM). Particles are represented by grey dots.
- Complete GEM depletion (observed):** On the right, the plume has moved further downwind. GEM is no longer present, and the mercury is entirely in the particle-bound form (PBM). A small house is shown on the ground for scale.

 A dashed double-headed arrow at the bottom indicates the total distance of approximately 38.5 km between the emission source and the point of complete depletion.

Real world ultrafine particle emission factors for road-traffic derived from multi-year urban flux measurements using eddy covariance

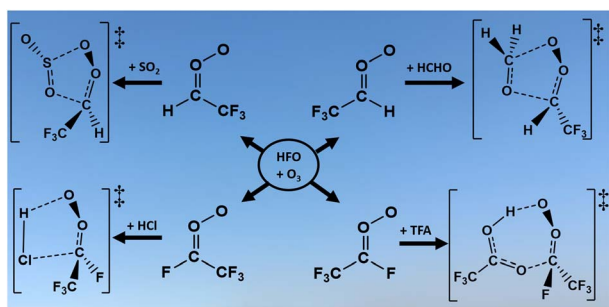
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Outdoor radon-222 in Arctic Finland

Radon-222 flux

The diagram illustrates the pathways of radon-222 flux from the soil to the atmosphere. It shows a cross-section of the ground with three distinct regions: a light grey 'Snow' layer on the left, a brown 'Soil' layer in the center, and a blue 'Sea' layer on the right. Two large black arrows point upwards from the soil surface. The first arrow originates from the 'Soil' layer and passes through the 'Snow' layer into the atmosphere. The second arrow originates from the 'Soil' layer and points directly into the atmosphere. A third, smaller arrow points upwards from the 'Sea' layer into the atmosphere. The text 'Radon-222 flux' is positioned at the top of the diagram.

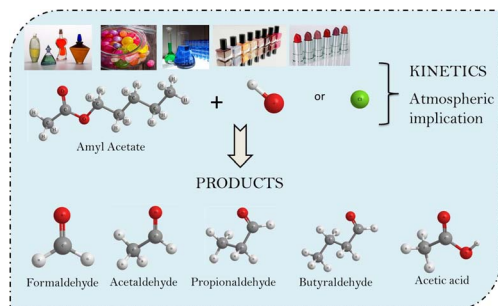
1460



Bimolecular sinks of Criegee intermediates derived from hydrofluoroolefins – a computational analysis

Nathan A. I. Watson* and Joseph M. Beames

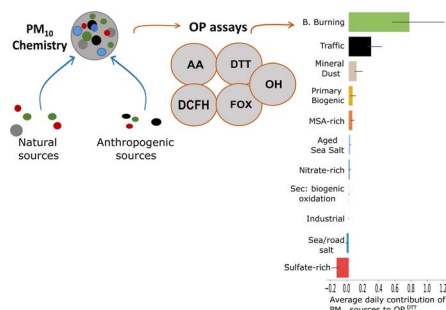
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OH and Cl radicals initiated oxidation of amyl acetate under atmospheric conditions: kinetics, products and mechanisms

Vianni G. Straccia C., María B. Blanco and Mariano A. Teruel*

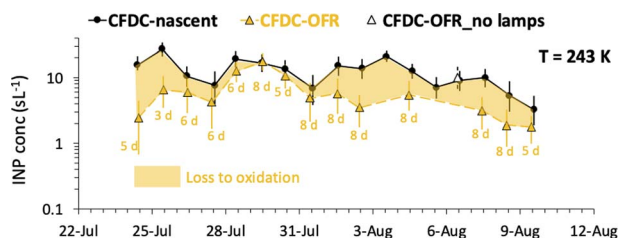
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Source apportionment of oxidative potential depends on the choice of the assay: insights into 5 protocols comparison and implications for mitigation measures

Pamela A. Dominutti*, Lucille Joanna S. Borlaza, Jean-Jacques Sauvain, Vy Dinh Ngoc Thuy, Stephan Houdier, Guillaume Suarez, Jean-Luc Jaffrezzo, Sean Tobin, Cécile Trébuchon, Stéphane Socquet, Emmanuel Moussu, Gladys Mary and Gaëlle Uzu*

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Atmospheric oxidation impact on sea spray produced ice nucleating particles

Paul J. DeMott*, Thomas C. J. Hill, Kathryn A. Moore, Russell J. Perkins, Liora E. Mael, Heidi L. Busse, Hansol Lee, Chathuri P. Kaluarachchi, Kathryn J. Mayer, Jonathan S. Sauer, Brock A. Mitts, Alexei V. Tivanski, Vicki H. Grassian, Christopher D. Cappa, Timothy H. Bertram and Kimberly A. Prather

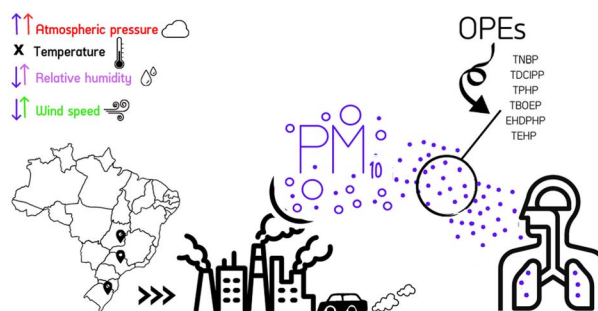


PAPERS

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Organophosphate esters (OPEs) in atmospheric particulate matter in different Brazilian regions

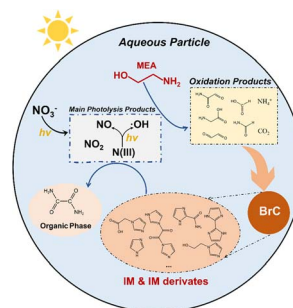
Priscila Boleta Gonçalves, Joyce Cristale, Amanda Araújo da Silva, Danilo Covaes Nogarotto, Daniela Montanari Migliavacca Osório, Lincoln Lucilio Romualdo and Simone Andréa Pozza*



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Monoethanolamine decay mediated by photolysis of nitrate in atmospheric particles: a brown carbon and organic phase formation pathway

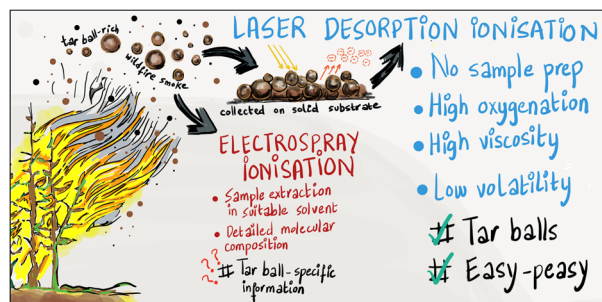
Xiaomeng Tian, Ruifeng Zhang, Bo Wei, Yalin Wang, Yongjie Li and Chak K. Chan*



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Molecular and physical composition of tar balls in wildfire smoke: an investigation with complementary ionisation methods and 15-Tesla FT-ICR mass spectrometry

Amna Ijaz,* William Kew, Zezhen Cheng, Susan Mathai, Nurun Nahar Lata, Libor Kovarik, Simeon Schum, Swarup China and Lynn R. Mazzoleni*



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A national crowdsourced network of low-cost fine particulate matter and aerosol optical depth monitors: results from the 2021 wildfire season in the United States

Eric A. Wendt, Bonne Ford, Michael Cheeseman, Zoey Rosen, Jeffrey R. Pierce, Shantanu H. Jathar, Christian L'Orange, Casey Quinn, Marilee Long, John Mehaffy, Daniel D. Miller-Lionberg, David H. Hagan and John Volckens*

