

List of Rolf Sander's Publications

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Open-access articles are marked with: 

— 2024 —

114. Wieser, F., Sander, R., Cho, C., Fuchs, H., Hohaus, T., Novelli, A., Tillmann, R., & Taraborrelli, D.: *Development of a multiphase chemical mechanism to improve secondary organic aerosol formation in CAABA/MECCA (version 4.7.0)*, *Geosci. Model Dev.*, 17, 4311–4330, doi:10.5194/GMD-17-4311-2024 (2024) 
113. Rosanka, S., Tost, H., Sander, R., Jöckel, P., Kerkweg, A., & Taraborrelli, D.: *How non-equilibrium aerosol chemistry impacts particle acidity: the GMXe AERosol CHEMistry (GMXe-AERCHEM, v1.0) sub-submodel of MESSy*, *Geosci. Model Dev.*, 17, 2597–2615, doi:10.5194/GMD-17-2597-2024 (2024) 
112. Sander, R.: *MEXPLORER 1.0.0 – A mechanism explorer for analysis and visualization of chemical reaction pathways based on graph theory*, *Geosci. Model Dev.*, 17, 2419–2425, doi:10.5194/GMD-17-2419-2024 (2024) 

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111. Soni, M., Sander, R., Sahu, L. K., Taraborrelli, D., Liu, P., Patel, A., Girach, I. A., Pozzer, A., Gunthe, S. S., & Ojha, N.: *Comprehensive multiphase chlorine chemistry in the box model CAABA/MECCA: Implications to atmospheric oxidative capacity*, *Atmos. Chem. Phys.*, 23, 15 165–15 180, doi:10.5194/ACP-23-15165-2023 (2023) 
110. Sander, R.: *Compilation of Henry's law constants (version 5.0.0) for water as solvent*, *Atmos. Chem. Phys.*, 23, 10 901–12 440, doi:10.5194/ACP-23-10901-2023 (2023) 
109. Lin, H., Long, M. S., Sander, R., Yantosca, R. M., Estrada, L. A., Shen, L., & Jacob, D. J.: *An adaptive auto-reduction solver for speeding up integration of chemical kinetics in atmospheric chemistry models: implementation and evaluation in the Kinetic Pre-Processor (KPP) version 3.0.0*, *J. Adv. Model. Earth Syst.*, 15, doi:10.1029/2022MS003293 (2023) 

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108. Karl, M., Pirjola, L., Grönholm, T., Kurppa, M., Anand, S., Zhang, X., Held, A., Sander, R., Dal Maso, M., Topping, D., Jiang, S., Kangas, L., & Kukkonen, J.: *Description and evaluation of the community aerosol dynamics model MAFOR v2.0*, *Geosci. Model Dev.*, 15, 3969–4026, doi:10.5194/GMD-15-3969-2022 (2022) 
107. Pozzer, A., Reifenberg, S., Kumar, V., Franco, B., Taraborrelli, D., Gromov, S., Ehrhart, S., Jöckel, P., Sander, R., Fall, V., Rosanka, S., Karydis, V., Akritidis, D., Emmerichs, T., Crippa, M., Guizzardi, D., Kaiser, J., Clarisse, L., Kiendler-Scharr, A., Tost, H., & Tsimpidi, A.: *Simulation of organics in the atmosphere: evaluation of EMACv2.54 with the Mainz Organic Mechanism (MOM) coupled to the ORACLE (v1.0) submodel*, *Geosci. Model Dev.*, 15, 2673–2710, doi:10.5194/GMD-15-2673-2022 (2022) 
106. Sander, R., Acree Jr., W. E., De Visscher, A., Schwartz, S. E., & Wallington, T. J.: *Henry's law constants (IUPAC Recommendations 2021)*, *Pure Appl. Chem.*, 94, 71–85, doi:10.1515/

105. Eger, P. G., Vereecken, L., Sander, R., Schuladen, J., Sobanski, N., Fischer, H., Karu, E., Williams, J., Vakkari, V., Petäjä, T., Lelieveld, J., Pozzer, A., & Crowley, J. N.: *Impact of pyruvic acid photolysis on acetaldehyde and peroxy radical formation in the boreal forest: theoretical calculations and model results*, *Atmos. Chem. Phys.*, 21, 14333–14349, doi:10.5194/ACP-21-14333-2021 (2021) 
104. Rosanka, S., Sander, R., Wahner, A., & Taraborrelli, D.: *Oxidation of low-molecular-weight organic compounds in cloud droplets: development of the Jülich Aqueous-phase Mechanism of Organic Chemistry (JAMOC) in CAABA/MECCA (version 4.5.0)*, *Geosci. Model Dev.*, 14, 4103–4115, doi:10.5194/GMD-14-4103-2021 (2021b) 
103. Rosanka, S., Sander, R., Franco, B., Wespes, C., Wahner, A., & Taraborrelli, D.: *Oxidation of low-molecular-weight organic compounds in cloud droplets: global impact on tropospheric oxidants*, *Atmos. Chem. Phys.*, 21, 9909–9930, doi:10.5194/ACP-21-9909-2021 (2021a) 
102. Franco, B., Blumenstock, T., Cho, C., Clarisse, L., Clerbaux, C., Coheur, P.-F., De Mazière, M., De Smedt, I., Dorn, H.-P., Emmerichs, T., Fuchs, H., Gkatzelis, G., Griffith, D. W. T., Gromov, S., Hannigan, J. W., Hase, F., Hohaus, T., Jones, N., Kerkweg, A., Kiendler-Scharr, A., Lutsch, E., Mahieu, E., Novelli, A., Ortega, I., Paton-Walsh, C., Pommier, M., Pozzer, A., Reimer, D., Rosanka, S., Sander, R., Schneider, M., Strong, K., Tillmann, R., Van Roozendaal, M., Vereecken, L., Vigouroux, C., Wahner, A., & Taraborrelli, D.: *Ubiquitous atmospheric production of organic acids mediated by cloud droplets*, *Nature*, 593, 233–237, doi:10.1038/S41586-021-03462-X (2021) 
101. Rüdiger, J., Gutmann, A., Bobrowski, N., Liotta, M., de Moor, J. M., Sander, R., Dinger, F., Tirpitz, J.-L., Ibarra, M., Saballos, A., Martínez, M., Mendoza, E., Ferruffino, A., Stix, J., Valdés, J., Castro, J. M., & Hoffmann, T.: *Halogen activation in the plume of Masaya volcano: field observations and box model investigations*, *Atmos. Chem. Phys.*, 21, 3371–3393, doi:10.5194/ACP-21-3371-2021 (2021) 
100. Taraborrelli, D., Cabrera-Perez, D., Bacer, S., Gromov, S., Lelieveld, J., Sander, R., & Pozzer, A.: *Influence of aromatics on tropospheric gas-phase composition*, *Atmos. Chem. Phys.*, 21, 2615–2636, doi:10.5194/ACP-21-2615-2021 (2021) 
99. Sander, R.: *Corrigendum to “Compilation of Henry’s law constants, version 4.0”, published in Atmos. Chem. Phys.*, 15, 4399–4981, 2015, *Atmos. Chem. Phys.*, doi:10.5194/ACP-15-4399-2015-CORRIGENDUM (2021) 

98. Sander, R., Baumgaertner, A., Cabrera-Perez, D., Frank, F., Gromov, S., Groß, J.-U., Harder, H., Huijnen, V., Jöckel, P., Karydis, V. A., Niemeyer, K. E., Pozzer, A., Riede, H., Schultz, M. G., Taraborrelli, D., & Tauer, S.: *The community atmospheric chemistry box model CAABA/MECCA-4.0*, *Geosci. Model Dev.*, 12, 1365–1385, doi:10.5194/GMD-12-1365-2019 (2019) 

97. Nikolaou, Z. M., Chen, J.-Y., Proestos, Y., Lelieveld, J., & Sander, R.: *Accelerating simulations using REDCHEM_v0.0 for atmospheric chemistry mechanism reduction*, *Geosci. Model Dev.*, 11, 3391–3407, doi:10.5194/GMD-11-3391-2018 (2018) 

96. Mallik, C., Tomsche, L., Bourtsoukidis, E., Crowley, J. N., Derstroff, B., Fischer, H., Hafermann, S., Hüser, I., Javed, U., Keßel, S., Lelieveld, J., Martinez, M., Meusel, H., Novelli, A., Phillips, G. J., Pozzer, A., Reiffs, A., Sander, R., Taraborrelli, D., Sauvage, C., Schuladen, J., Su, H., Williams, J., & Harder, H.: *Oxidation processes in the eastern Mediterranean atmosphere: evidence from the modelling of HO_x measurements over Cyprus*, Atmos. Chem. Phys., 18, 10 825–10 847, doi:10.5194/ACP-18-10825-2018 (2018) 

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94. Keßel, S., Cabrera-Perez, D., Horowitz, A., Veres, P. R., Sander, R., Taraborrelli, D., Tucceri, M., Crowley, J. N., Pozzer, A., Stöner, C., Vereecken, L., Lelieveld, J., & Williams, J.: *Atmospheric chemistry, sources and sinks of carbon suboxide, C₃O₂*, Atmos. Chem. Phys., 17, 8789–8804, doi:10.5194/ACP-17-8789-2017 (2017) 

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93. Cabrera-Perez, D., Taraborrelli, D., Sander, R., & Pozzer, A.: *Global atmospheric budget of simple monocyclic aromatic compounds*, Atmos. Chem. Phys., 16, 6931–6947, doi:10.5194/ACP-16-6931-2016 (2016) 
92. Sukhodolov, T., Rozanov, E., Ball, W., Bais, A., Tourpali, K., Shapiro, A., Telford, P., Smyshlyaev, S., Fomin, B., Sander, R., Bossay, S., Chipperfield, M., Dhomse, S., Haigh, J., Peter, T., & Schmutz, W.: *Evaluation of simulated photolysis rates and their response to solar irradiance variability*, J. Geophys. Res. Atmos., 121, doi:10.1002/2015JD024277 (2016)
91. Jöckel, P., Tost, H., Pozzer, A., Kunze, M., Kirner, O., Brenninkmeijer, C. A. M., Brinkop, S., Cai, D. S., Dyroff, C., Eckstein, J., Frank, F., Garny, H., Gottschaldt, K.-D., Graf, P., Grewe, V., Kerkweg, A., Kern, B., Matthes, S., Mertens, M., Meul, S., Neumaier, M., Nützel, M., Oberländer-Hayn, S., Ruhnke, R., Runde, T., Sander, R., Scharffe, D., & Zahn, A.: *Earth System Chemistry integrated Modelling (ESCiMo) with the Modular Earth Submodel System (MESSy), version 2.51*, Geosci. Model Dev., 9, 1153–1200, doi:10.5194/GMD-9-1153-2016 (2016) 
90. Baumgaertner, A. J. G., Jöckel, P., Kerkweg, A., Sander, R., & Tost, H.: *Implementation of the Community Earth System Model (CESM1, version 1.2.1) as a new base model into version 2.50 of the MESSy framework*, Geosci. Model Dev., 9, 125–135, doi:10.5194/GMD-9-125-2016 (2016) 

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89. Sander, R.: *Compilation of Henry's law constants (version 4.0) for water as solvent*, Atmos. Chem. Phys., 15, 4399–4981, doi:10.5194/ACP-15-4399-2015 (2015) 
88. Jordan, C. E., Pszenny, A. A. P., Keene, W. C., Cooper, O. R., Deegan, B., Maben, J., Routhier, M., Sander, R., & Young, A. H.: *Origins of aerosol chlorine during winter over north central Colorado, USA*, J. Geophys. Res. Atmos., 120, 678–694, doi:10.1002/2014JD022294 (2015)

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86. Hens, K., Novelli, A., Martinez, M., Auld, J., Axinte, R., Bohn, B., Fischer, H., Keronen, P., Kubistin, D., Nölscher, A. C., Oswald, R., Paasonen, P., Petäjä, T., Regelin, E., Sander, R., Sinha, V., Sipilä, M., Taraborrelli, D., Tatum Ernest, C., Williams, J., Lelieveld, J., & Harder, H.: *Observation and modelling of HO_x radicals in a boreal forest*, Atmos. Chem. Phys., 14, 8723–8747, doi:10.5194/ACP-14-8723-2014 (2014) 
85. Long, M. S., Keene, W. C., Easter, R. C., Sander, R., Liu, X., Kerkweg, A., & Erickson, D.: *Sensitivity of tropospheric chemical composition to halogen-radical chemistry using a fully coupled size-resolved multiphase chemistry-global climate system: halogen distributions, aerosol composition, and sensitivity of climate-relevant gases.*, Atmos. Chem. Phys., 14, 3397–3425, doi:10.5194/ACP-14-3397-2014 (2014) 
84. Adame, J. A., Martínez, M., Sorribas, M., Hidalgo, P. J., Harder, H., Diesch, J.-M., Drewnick, F., Song, W., Williams, J., Sinha, V., Hernández-Ceballos, M. A., Vilà-Guerau de Arellano, J., Sander, R., Hosaynali-Beygi, Z., Fischer, H., Lelieveld, J., & De la Morena, B.: *Meteorology during the DOMINO campaign and its connection with trace gases and aerosols*, Atmos. Chem. Phys., 14, 2325–2342, doi:10.5194/ACP-14-2325-2014 (2014) 

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82. Keller-Rudek, H., Moortgat, G. K., Sander, R., & Sörensen, R.: *The MPI-Mainz UV/VIS spectral atlas of gaseous molecules of atmospheric interest*, Earth Syst. Sci. Data, 5, 365–373, doi:10.5194/ESSD-5-365-2013 (2013) 
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79. Young, A. H., Keene, W. C., Pszenny, A. A. P., Sander, R., Thornton, J. A., Riedel, T. P., & Maben, J. R.: *Phase partitioning of soluble trace gases with size-resolved aerosols in near-surface continental air over northern Colorado, USA, during winter*, J. Geophys. Res., 118, 9414–9427, doi:10.1002/JGRD.50655 (2013)
78. Long, M. S., Keene, W. C., Easter, R., Sander, R., Kerkweg, A., Erickson, D., Liu, X., & Ghan, S.: *Implementation of the chemistry module MECCA (v2.5) in the modal aerosol version of the Community Atmosphere Model component (v3.6.33) of the Community Earth System Model*, Geosci. Model Dev., 6, 255–262, doi:10.5194/GMD-6-255-2013 (2013) 

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72. Frieß, U., Sihler, H., Sander, R., Pöhler, D., Yilmaz, S., & Platt, U.: *The vertical distribution of BrO and aerosols in the Arctic: Measurements by active and passive differential optical absorption spectroscopy*, J. Geophys. Res., 116, D00R04, doi:10.1029/2011JD015938 (2011)
71. Zhang, H., Linford, J. C., Sandu, A., & Sander, R.: *Chemical mechanism solvers in air quality models*, Atmos., 2, 510–532, doi:10.3390/ATMOS2030510 (2011) 
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69. Lawler, M. J., Sander, R., Carpenter, L. J., Lee, J. D., von Glasow, R., Sommariva, R., & Saltzman, E. S.: *HOCl and Cl₂ observations in marine air*, Atmos. Chem. Phys., 11, 7617–7628, doi:10.5194/ACP-11-7617-2011 (2011) 
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