

Curriculum Vitae-Junwei Song

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Research Keywords

Mass spectrometers; AMS; PTR-MS; VOCs; SOA formation; Source apportionment

Scientific Education

2018-2022: PhD, Institute of Meteorology and Climate, Karlsruhe Institute of Technology, Germany (Supervisors: Dr. Harald Saathoff and Prof. Thomas Leisner)

Thesis: Online Chemical Characterization of Volatile Organic Compounds and Aerosol Particles at Urban and Rural Locations

2015-2018: M.S. Environment Engineering, South China University of Technology, Guangzhou, China (Supervisor: Prof. Senchao Lai)

Thesis: Impacts of regional transport and atmospheric reactions on gaseous organic pollutants over the South China Sea

2011-2015: B.S. Environmental Science, Anhui Normal University, Wuhu, China

Software Skills

IGOR Pro, Igor-based interface (ZeFir and HYSPLIT), Positive Matrix Factorization tool (EPA PMF and SoFi), Python

Publications

First-author

[1] **Song, J.W.**, Saathoff, H., Gao, L.Y., Gebhardt, R., Jiang, F., Vallon, M., Bauer, J., Norra, S., Leisner, T.: Variations of PM_{2.5} sources in the context of meteorology and seasonality at an urban street canyon in Southwest Germany, *Atmospheric Environment*, 119147, 2022.

[2] Meng, Y., **Song, J.W.**, Zeng, L., Zhang, Y.Y., Zhao, Y., Liu, X.F., Guo, H., Zhong, L.J., Ou, Y., Zhou, Y., Zhang, T., Yue, D.L., and Lai, S.C.: Ambient volatile organic compounds at a receptor site in the Pearl River Delta region: Variations, source apportionment and effects on ozone formation, *Journal of Environmental Sciences*, 111, 104-117, 2022 (co-first authored)

[3] **Song, J. W.**, Zhang, Y. Y., Zhang, Y. L., Yuan, Q., Zhao, Y., Wang, X. M., Zou, S. C., Xu, W. H., and Lai, S. C.: A case study on the characterization of non-methane hydrocarbons over the South China Sea: Implication of land-sea air exchange, *Science of The Total Environment*, 134754, 2020

[4] **Song, J. W.**, Zhang, Y. Y., Huang, Y., Ho, K. F., Yuan, Z. B., Ling, Z. H., Niu, X. J., Gao, Y., Cui, L., Louie, P. K. K., Lee, S. C., and Lai, S. C.: Seasonal variations of C₁-C₄ alkyl nitrates

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at a coastal site in Hong Kong: Influence of photochemical formation and oceanic emissions, *Chemosphere*, 194, 275-284, 2018

[5] **Song, J. W.**, Zhao, Y., Zhang, Y. Y., Fu, P. Q., Zheng, L. S., Yuan, Q., Wang, S., Huang, X. F., Xu, W. H., Cao, Z. X., Gromov, S., and Lai, S. C.: Influence of biomass burning on atmospheric aerosols over the western South China Sea: Insights from ions, carbonaceous fractions and stable carbon isotope ratios, *Environmental Pollution*, 242, 1800-1809, 2018

Co-authored

[1] Gao, L., **Song, J.**, Mohr, C., Huang, W., Vallon, M., Jiang, F., Leisner, T., Saathoff, H.: Kinetics, SOA yields, and chemical composition of secondary organic aerosol from β -caryophyllene ozonolysis with and without nitrogen oxides between 213 and 313 K. *Atmospheric Chemistry and Physics*, 22, 6001-6020, 2022

[2] Vallon, M., Gao, L., Jiang, F., Krumm, B., Nadolny, J., **Song, J.**, Leisner, T., Saathoff, H.: LED-based solar simulator to study photochemistry over a wide temperature range in the large simulation chamber AIDA, *Atmospheric Measurement Techniques*, 15, 1795-1810, 2022.

[3] Bertozzi, B., Wagner, R., **Song, J.**, Höhler, K., Pfeifer, J., Saathoff, H., Leisner, T., and Möhler, O.: Ice nucleation ability of ammonium sulfate aerosol particles internally mixed with secondary organics, *Atmospheric Chemistry and Physics*, 21, 2021.

[4] Wang, S., Song, T. L., Shiraiwa, M., **Song, J. W.**, Ren, H., Ren, L. J., Wei, L. F., Sun, Y. L., Zhang, Y. Y., Fu, P. Q., and Lai, S. C.: Occurrence of Aerosol Proteinaceous Matter in Urban Beijing: An Investigation on Composition, Sources, and Atmospheric Processes During the "APEC Blue" Period, *Environmental Science and Technology*, 53, 7380-7390, 2019.

[5] Yuan, Q., Lai, S. C., **Song, J. W.**, Ding, X., Zheng, L. S., Wang, X. M., Zhao, Y., Zheng, J. Y., Yue, D. L., Zhong, L. J., Niu, X. J., and Zhang, Y. Y.: Seasonal cycles of secondary organic aerosol tracers in rural Guangzhou, Southern China: The importance of atmospheric oxidants, *Environmental Pollution*, 240, 884-893, 2018.

[6] Song, T. L., Wang, S., Zhang, Y. Y., **Song, J. W.**, Liu, F. B., Fu, P. Q., Shiraiwa, M., Xie, Z. Y., Yue, D. L., Zhong, L. J., Zheng, J. Y., and Lai, S. C.: Proteins and Amino Acids in Fine Particulate Matter in Rural Guangzhou, Southern China: Seasonal Cycles, Sources, and Atmospheric Processes. *Environmental Science and Technology*, 51, 6773-6781, 2017.

[7] Lai, S. C., **Song, J. W.**, Song, T. L., Huang, Z. J., Zhang, Y. Y., Zhao, Y., Liu, G. C., Zheng, J. Y., Mi, W. Y., Tang, J. H., Zou, S. C., Ebinghaus, R., and Xie, Z. Y.: Neutral polyfluoroalkyl substances in the atmosphere over the northern South China Sea, *Environmental Pollution*, 214, 449-455, 2016.

Research Experience

1. Secondary organic aerosol chamber simulation campaigns at AIDA (SOA18b, SOA19a/b, SOA20a/b, SOA21a, INCAS01, <http://www.imk-aaf.kit.edu/78.php>)
2. Field campaigns at KIT campus north in north of Karlsruhe (Task: operation of **HR-ToF-AMS and CHARON-PTR-MS**, 03/2021 and 07/2021)
3. Field campaigns in downtown Karlsruhe (Task: operation of **HR-ToF-AMS and CHARON-PTR-MS**, 07/2019 and 03/2020)
4. MOSES campaign in a pine forest working jointly with Forschungszentrum Jülich (IEK-8), Eifel, Germany (Tasks: operation of **CHARON-PTR-MS and inter-comparison with VOCUS-PTR-MS**, 06/2020)

Conference/Workshop

1. “Characteristics of PM_{2.5} aerosol particles during a heatwave in an urban atmosphere in southwest Germany”. EGU 2020, Vienna, Austria (Online Poster, 3-8/05/2020)
2. “Characteristics of PM_{2.5} aerosol particles during the 2019 summer heatwave in an urban atmosphere in southwest Germany”. EAC 2020, Archen, Germany (Online Poster, 31/08-4/09/2020)
3. Hand-on training of CHARON-PTR-MS at IONICON in Innsbruck, Austria (09-10/10/ 2019)
4. Summer School on theory and practice of aerosol chemistry at the Navarino Environmental Observatory (NEO) in Messinia, Greece (06-12/06/2019)
5. Numerical Model Training Course (ICON-ART) at DWD in Langen, Germany (08-12/04/2019)
6. Mass Spectrometry workshop in Wuppertal, Germany (25-28/03/2019)