

## Prof. Ke Li (李柯)

School of Environmental Science and Engineering, Nanjing University of Information Science and Technology,  
C315 Xueke Building #1, No.219 Ningliu Rd, Nanjing 210044, China

188-1087-1998 • [keli@nuist.edu.cn](mailto:keli@nuist.edu.cn)

### EDUCATION

---

**2017 Ph.D.**, Atmospheric Physics and Atmospheric Environment, University of Chinese Academy of Sciences (UCAS), Beijing, China

**2012 B.Sc.**, Atmospheric Sciences, Nanjing University of Information Science Technology (NUIST), Nanjing, China

### RESEARCH INTERESTS

---

- Chemical and physical drivers of air pollutants
- Climate change and linkage to air quality
- Modeling and remote sensing of atmospheric pollutants
- Environmental and societal impacts of air pollution

### RESEARCH EXPERIENCE

---

#### Professor

Nanjing University of Information Science Technology (NUIST), Nanjing Aug. 2021–

#### Research Associate

Harvard University, Cambridge Feb. 2021– Jul. 2021

#### Postdoctoral Fellow

Harvard University, Cambridge Feb. 2018–Feb. 2021

#### Research Associate

Institute of Atmospheric Physics, CAS, Beijing Aug. 2017–Jan. 2018

#### Visiting Graduate

CSIRO Oceans and Atmosphere, Melbourne Nov. 2015–Apr. 2016 & Feb. 2017–Jun. 2017

### PUBLICATIONS

---

**2** ESI 0.1% Hot Paper, **7** ESI 1% Highly Cited Paper, **1600+** citations from [Google scholar](#) (as of Sep 2021).

#### 2021

21. Li K., D. J. Jacob, H. Liao, Y.L. Qiu, L. Shen, S.X. Zhai, K. H. Bates, M. P. Sulprizio, S.J. Song, X. Lu, Q. Zhang, B. Zheng, Y.L. Zhang, J.Q. Zhang, H.C. Lee, and S.K. Kuk. (2021). *Ozone pollution in the North China Plain spreading into the late-winter haze season*. Proceedings of the National Academy of Sciences. doi.org/10.1073/pnas.2015797118.

20. Zhai, S.X., D.J. Jacob, X. Wang, Z.R. Liu, T.X. Wen, V. Shah, K. Li, J. Moch, K.H. Bates, S.J. Song, L. Shen, Y.Z. Zhang, G. Luo, F.Q. Yu, Y.L. Sun, L.T. Wang, M.Y. Qi, J. Tao, K. Gui, H.H. Xu, Q. Zhang, T.L. Zhao, Y.S. Wang, H.C. Lee, H. Choi, and H. Liao. (2021). *Control of particulate nitrate air pollution in China*. Nature Geoscience doi.org/10.1038/s41561-021-00726-z.

19. Song, S.J., T. Ma, Y. Zhang, L. Shen, P. Liu, K. Li, S. Zhai, H. Zheng, M. Gao, F. Duan, K. He, and M. B. McElroy. (2021). *Global modeling of heterogeneous hydroxymethanesulfonate chemistry*. Atmospheric Chemistry and Physics doi.org/10.5194/acp-21-457-2021.

## 2020

18. Li K., D.J. Jacob, L. Shen, X. Lu, I.D. Smedt, and H. Liao. (2020). *Increases in surface ozone pollution in China from 2013 to 2019: anthropogenic and meteorological influences*. Atmospheric Chemistry and Physics doi.org/10.5194/acp-2020-298.
17. Qiu Y.L., Z.Q. Ma\*, K. Li\*, W.L. Lin, Y.X. Tang, F. Dong, and H. Liao. (2020). *Markedly enhanced levels of peroxyacetyl nitrate (PAN) during COVID-19 in Beijing*. Geophysical Research Letters doi.org/10.1029/2020GL089623.
16. Lu X., L. Zhang, X.L. Wang, M. Gao, K. Li, Y.Z. Zhang, X. Yue, and Y.H. Zhang. (2020). *Rapid increases in warm-season surface ozone and resulting health impact over China since 2013*. Environmental Science & Technology Letters doi.org/10.1021/acs.estlett.0c00171.
15. Shah V., D.J. Jacob, K. Li, R.F. Silvern, S.X. Zhai, M.Y. Liu, J.T. Lin, and Q. Zhang. (2020). *Effect of changing NO<sub>x</sub> lifetime on the seasonality and long-term trends of satellite-observed tropospheric NO<sub>2</sub> columns over China*. Atmospheric Chemistry and Physics doi.org/10.5194/acp-20-1483-2020.
14. Gu Y.X., K. Li, J.M. Xu, H. Liao, and G.Q. Zhou. (2020). *Observed dependence of surface ozone on increasing temperature in Shanghai, China*. Atmospheric Environment doi.org/10.1016/j.atmosenv.2019.117108.

## 2019

13. Li K., D.J. Jacob, H. Liao, J. Zhu, V. Shah, L. Shen, K.H. Bates, Q. Zhang, and S. X. Zhai. (2019). *A two-pollutant strategy for improving ozone and particulate air quality in China*. Nature Geoscience doi.org/10.1038/s41561-019-0464-x.
12. Li K., D.J. Jacob, H. Liao, L. Shen, Q. Zhang, and K.H. Bates. (2019). *Anthropogenic drivers of 2013-2017 trends in summer surface ozone in China*. Proceedings of the National Academy of Sciences doi.org/10.1073/pnas.1812168116.
11. Zhai S.X., D.J. Jacob, X. Wang, L. Shen, K. Li, Y. Z. Zhang, K. Gui, T. L. Zhao, and H. Liao. (2019). *Fine particulate matter (PM<sub>2.5</sub>) trends in China, 2013–2018: separating contributions from anthropogenic emissions and meteorology*. Atmospheric Chemistry and Physics doi.org/10.5194/acp-19-11031-2019.
10. Lu X., L. Zhang, Y.F. Chen, M. Zhou, B. Zheng, K. Li, Y.M. Liu, J.T. Lin, T.M. Fu, and Q. Zhang. (2019). *Exploring 2016-2017 surface ozone pollution over China: source contributions and meteorological influences*. Atmospheric Chemistry and Physics doi.org/10.5194/acp-19-8339-2019.
9. Shen L., D.J. Jacob, X. Liu, G. Huang, K. Li, H. Liao, and T. Wang. (2019). *An evaluation of the ability of the Ozone Monitoring Instrument (OMI) to observe boundary layer ozone pollution across China: application to 2005–2017 ozone trends*. Atmospheric Chemistry and Physics doi.org/10.5194/acp-19-6551-2019.
8. Shen L., D.J. Jacob, L. Zhu, Q. Zhang, B. Zheng, M.P. Sulprizio, K. Li, I. De Smedt, G. Gonzalo Abad, H. Cao, T.-M. Fu, and H. Liao. (2019). *2005-2016 trends of formaldehyde columns over China observed by satellites: increasing anthropogenic emissions of volatile organic compounds and decreasing agricultural fire emissions*. Geophysical Research Letters doi.org/10.1029/2019GL082172.
7. Qiu Y.L., W.L. Lin, K. Li, L. Chen, Q. Yao, Y.X. Tang, and Z.Q. Ma. (2019). *Vertical characteristics of peroxyacetyl nitrate (PAN) from a 250m tower in northern China during September 2018*. Atmospheric Environment doi.org/10.1016/j.atmosenv.2019.05.066.
6. Qiu Y.L. Z.Q. Ma, and K. Li. (2019). *A modeling study of the peroxyacetyl nitrate (PAN) during a wintertime haze event in Beijing, China*. Science of the Total Environment doi.org/10.1016/j.scitotenv.2018.09.253.

## 2018

5. Li K., H. Liao, W.J. Cai, and Y. Yang. (2018). *Attribution of anthropogenic influence on atmospheric patterns conducive to recent most severe haze over eastern China*. Geophysical Research Letters

doi.org/10.1002/2017GL076570.

4. Zhang Y., H. Liao, X. Ding, D. Jo, and K. Li. (2018). *Implications of RCP emissions on future concentration and direct radiative forcing of secondary organic aerosol over China*. Science of the Total Environment doi.org/10.1016/j.scitotenv.2018.05.274.

### 2017 and before

3. Cai W.J., K. Li, H. Liao, H.J. Wang, and L.X. Wu (2017) *Weather conditions conducive to Beijing severe haze more frequent under climate change*. Nature Climate Change doi.org/10.1038/nclimate3249. (Journal cover)
2. Li K., H. Liao, J. Zhu, and J. Moch. (2016). *Implications of RCP emissions on future PM<sub>2.5</sub> air quality and direct radiative forcing over China*. Journal of Geophysical Research-Atmospheres doi.org/10.1002/2016JD025623.
1. Li K., H. Liao, Y.H. Mao, and D.A. Ridley. (2016). *Source sector and region contributions to concentration and direct radiative forcing of black carbon in China*, Atmospheric Environment doi.org/10.1016/j.atmosenv.2015.06.014.

## PRESENTATIONS

---

- Li K. et al., *Ozone pollution in the North China Plain spreading into the late-winter haze season*. AGU Fall Meeting, December 2020, Oral (remotely).
- Li K. et al., *Ozone pollution in the North China Plain spreading into the late-winter haze season*. Atmospheric Chemical Mechanisms Virtual Conference, November 2020, Oral (remotely).
- Li K. et al., *Ozone Suppression in China Under High PM<sub>2.5</sub> Conditions: A Two-Pollutant Control Strategy*. 2020 AMS Annual Meeting, January 2020, Boston, USA. Oral.
- Li K. et al., *Suppression of summer ozone formation under high aerosol conditions*. The 9th international GEOS-Chem Meeting (IGC9), May 2019, Harvard University, Boston, USA. Oral.
- Li K. et al., *Anthropogenic drivers of 2013–2017 trends in summer surface ozone in China*. AGU Fall Meeting. December 2018, Washington D.C. Poster.
- Li K. et al., *Occurrence of severe air pollution events over eastern China under climate change*. Air Pollution Extremes Workshop. November 2018, Columbia University, New York, USA. Poster.
- Li K. et al., *Anthropogenic and meteorological drivers of 2013-2017 variability in summer surface ozone in China*, The First Regional GEOS-Chem Asia Meeting. May 2018, NUIST, Nanjing, China. Oral.
- Li K. et al., *Attributed anthropogenic influence on atmospheric patterns conducive to recent extreme haze over eastern China*, Asian Conference on Meteorology 2017 (ACM 2017), October 2017, Busan, Korea. Oral.
- Li K., et al., *Weather conditions conducive to Beijing severe haze more frequent under climate change*. *The 8th international GEOS-Chem Meeting (IGC8)*, May 2017, Harvard University, Boston, USA. Poster.
- Li K., et al., *Source sector and region contributions to concentration and direct radiative forcing of black carbon in China*, *The 7th international GEOS-Chem Meeting (IGC7)*, May 2015, Harvard University, Boston, USA. Oral.
- Li K., *Source sector and region contributions to concentration and direct radiative forcing of black carbon in China*, The 31th annual meeting of Chinese meteorological society, November 2014, Beijing, China. Oral.

## PROFESSIONAL SERVICE

---

### Membership and Responsibilities:

Co-lead, [East Asia Focus Working Group](#), Tropospheric Ozone Assessment Report (TOAR), Phase II

Member, American Geophysical Union, American Meteorological Society

### Journal editor:

*Frontiers in Climate*, Associate Editor, 2021-

*Atmosphere*, Topics and Review Board, 2019-

### Journal reviewer:

*PNAS, Nature Communications, Science Advances, One Earth, Geophysical Research Letters, Atmospheric Chemistry and Physics, Environmental Science & Technology, Environmental Science & Technology Letters, Environmental Health Perspectives, Environmental Research Letters, Environmental Chemistry Letters, Atmospheric Environment, Environmental Pollution, Science of the Total Environment, Journal of Geophysical Research, Earth's Future, Journal of Climate, Climate Dynamics, International Journal of Climatology, Atmospheric Research, Journal of Atmospheric and Solar-Terrestrial Physics, Atmosphere, Plos One, Sustainability, Journal of Cleaner Production*

**Proposal reviewer:**

*NOAA Atmospheric Chemistry, Carbon Cycle and Climate (AC4) Program*

## **PROFESSIONAL SKILLS**

---

**Numerical model:** Experienced with the global chemical transport model (GEOS-Chem) and the regional chemistry-climate model (WRF-Chem).

**Computer proficiency:** skillful with for software packages and coding languages: UNIX, FORTRAN, MATLAB, NCL, IDL, and CDO. Familiar with data formats: Binary, NC, HDF, BPCH, and MAT.

**Language:** native in Chinese, good written and oral skills in English.

## **AWARDS AND HONOURS**

---

Travel Grants, University of Chinese Academy of Sciences	2015
Excellent Student, University of Chinese Academy of Sciences	2015
Graduate Scholarship, IAP/CAS	2012–2017
Excellent Student, NUIST	2009–2011
National Encouragement scholarship, NUIST	2009–2011