

## 聂绩

助理教授, 研究员

北京大学, 物理学院大气与海洋科学系

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### 教育背景

博士, 哈佛大学, 地球与行星科学系, 2013

硕士, 北京大学, 大气与海洋科学系, 2008

学士, 北京大学, 大气与海洋科学系, 2005

### 工作经历

2017-9- 北京大学, 物理学院大气与海洋科学系, 助理教授, 研究员

2017-2017 哥伦比亚大学, 拉蒙特-多赫蒂地球观测台, 研究科学家

2013-2016 哥伦比亚大学, 拉蒙特-多赫蒂地球观测台, 博士后

2013-2013 哈佛大学, 地球与行星科学系, 博士后

### 荣誉奖励

2017 “千人计划” (青年)

2013 Lamont-Doherty Postdoctoral Fellowship, Columbia University

### 科研兴趣

热带动力学, 大气对流, 气候动力学

### 社会服务

为 Journal of the Atmospheric Sciences, Journal of Advances in Modeling Earth Systems, Quarterly Journal of the Royal Meteorological Society, Climate Dynamics, Meteorology and Atmospheric Physics, 等杂志审稿

### 学术论文

1. **Nie, J., Y. Xia, S. Hu, J. Yang, and D. Ma\***: Similarity of atmospheric thermal stratification over elevated surface under Radiative-Convective Equilibrium, *Geophysical Research Letters*, accepted.

2. Martin, Z.D.\*, S. Wang, **J. Nie**, and A. H. Sobel, 2019: The influence of the quasi-biennial oscillation on the Madden-Julian oscillation in idealized cloud-resolving simulations, *Journal of the Atmospheric Sciences*, accepted.
3. Tian, Y.\*, Z. Kuang, M. Singh, and **J. Nie**, 2018: The vertical momentum budget of shallow cumulus convection: insights from a Lagrangian perspective, *Journal of Advances in Modeling Earth Systems*, 11. <https://doi.org/10.1029/2018MS001451>.
4. Tandon, N. F.\*, **J. Nie**, and X. Zhang, 2018: Strong Influence of Eddy Length on Boreal Summertime Extreme Precipitation Projections, *Geophysical Research Letters*, [doi.org/10.1029/2018GL079327](https://doi.org/10.1029/2018GL079327).
5. **Nie, J.\***, A. H. Sobel, D. A. Shaevitz, and S. Wang, 2018: Dynamic Amplification of Extreme Precipitation Sensitivity, *Proc. Natl. Acad. Sci.*, 115, 9467-9472.
6. **Nie, J.\***, D. Shaevitz, and A. H. Sobel, 2016: Triggers and Feedback in the 2010 Pakistan Flood: Modeling Extreme Precipitation with Interactive Large-Scale Ascent, *Journal of Advances in Modeling Earth Systems*, accepted.
7. **Nie, J.\***, Z. Kuang, D. Jacob and J. Guo, 2016: Representing effects of aqueous phase reactions in shallow cumuli in global models, *Journal of Geophysical Research: Atmospheres*, 121, [doi:10.1002/2015JD024208](https://doi.org/10.1002/2015JD024208).
8. **Nie, J.\*** and A. H. Sobel, 2016: Modeling the Interaction between Quasi-Geostrophic Vertical Motion and Convection in a Single Column, *Journal of the Atmospheric Sciences*, 73, 1101-1117, [doi:10.1175/JAS-D-15-0205.1](https://doi.org/10.1175/JAS-D-15-0205.1).
9. Gentine, P.\*, A. Garelli, S. Park, **J. Nie**, G. Torri, and Z. Kuang, 2016: Role of surface heat fluxes underneath cold pools, *Geophysical Research Letters*, 43, [doi:10.1002/2015GL067262](https://doi.org/10.1002/2015GL067262).
10. Wang, S.\*, A. H. Sobel, and **J. Nie**, 2016: Modeling the MJO rain rates using parameterized large-scale dynamics: vertical structure, radiation, and horizontal advection of dry air, *Journal of Advances in Modeling Earth Systems*, 8, [doi:10.1002/2015MS000529](https://doi.org/10.1002/2015MS000529).
11. **Nie, J.\*** and A. H. Sobel, 2015: Responses of tropical deep convection to the QBO: cloud-resolving simulations, *Journal of the Atmospheric Sciences*, 72, 3625-3638, [doi:10.1175/JAS-D-15-0035.1](https://doi.org/10.1175/JAS-D-15-0035.1).
12. **Nie, J.\*** and Z. Kuang, 2012: Beyond bulk entrainment and detrainment rates: a new framework for diagnosing mixing in cumulus convection, *Geophysical Research Letters*, 39, [doi:10.1029/2012GL053992](https://doi.org/10.1029/2012GL053992).
13. **Nie, J.\*** and Z. Kuang, 2012: Responses of shallow cumulus convection to large-scale temperature and moisture perturbations: a comparison of large-eddy simulations and a convective parameterization based on stochastically entraining parcels, *Journal of the Atmospheric Sciences*, 69, 1936-1956, [doi:10.1175/JAS-D-11-0279.1](https://doi.org/10.1175/JAS-D-11-0279.1).
14. **Nie, J.**, W. R. Boos, and Z. Kuang\*, 2010: Observational Evaluation of a

- Convective Quasi-Equilibrium View of Monsoons, *Journal of Climate*, 23, 4416-4428, doi:10.1175/2010JCLI3505.1.
15. **Nie, J.\***, P. Wang, W. Yang, and B. Tan, 2008: Northern Hemisphere Storm Tracks in Strong AO Anomaly Winters, *Atmospheric Science Letters*, doi: 10.1002/asl.186.
16. Yang, W.\*, **J. Nie**, P. Lin, and B. Tan, 2007: Baroclinic wave packets in an extended quasigeostrophic two-layer model, *Geophysical Research Letters*, 34, doi:10.1029/2006GL029077.

## 会议报告

### *Invited talks*

- Dec. 2018, Institute of Atmospheric Physics, Center for Monsoon System Research
- Nov. 2018, Nanjing University of Information Science and Technology, School of Atmospheric Physics
- Nov. 2018, Sun Yat-sen University, School of Atmospheric Sciences
- Oct. 2018, Academia Sinica of Taiwan, Research Center for Environmental Changes
- Oct. 2018, National Central University of Taiwan, Department of Atmospheric Sciences
- Aug. 2018, Fudan University, Department of Atmospheric and Oceanic Sciences
- Feb. 2017, Stanford University, Earth System Science seminar
- Jul. 2016, University of New South Wales, Climate Change Research Centre
- Mar. 2016, Yale University, AOCD seminar
- Jan. 2016, McGill University, Atmospheric and Oceanic Sciences seminar
- Jan. 2016, University of Toronto, Atmospheric Physics seminar
- Jun. 2013, Sun Yat-sen University, Atmospheric Sciences colloquium
- May 2013, Peking University, Atmospheric and Oceanic Sciences colloquium

### *Conference presentations*

- Jan. 2019, Annual Meeting of AMS, Phoenix, AZ: Synoptic characteristics of extreme precipitation events in East China and Southeast United States (oral presentation)
- Dec. 2018, Annual Meeting of IAP-LASG, Beijing: (invited talk)
- Nov. 2018, Annual Meeting of the Key Laboratory of Mesoscale Severe Weather of Nanjing University, Nanjing: (invited talk)

- Oct. 2018, Annual Meeting of the Chinese Meteorological Society, Hefei: 一个新的基于随机夹卷的浅对流参数化模型 (oral presentation)
- Oct. 2018, Workshop "Atmospheric Sciences across the Straits", Taipei: Climatic Responses Of Extreme Precipitation (oral presentation)
- May 2018, Workshop "frontier of climate dynamics" in Shiyan, Hubei: 极端降雨的气候响应 (oral presentation)
- Mar. 2018, Monash University workshop "Understanding and Modelling Atmospheric Processes", Lorne, Australia: Does extreme precipitation scaling follow CC scaling? (oral presentation)
- Sept. 2017, the 5th nonlinearly atmospheric-oceanic dynamics workshop, Wuhan, Hubei: 极端降雨中的大尺度—对流相互作用 (oral presentation)
- Dec. 2016, 2016 American Geophysical Union Annual Fall meeting, San Francisco, CA: Enhanced Sensitivity of Precipitation Extremes on Surface Temperature in the 2015 Texas Flood (poster presentation)
- Dec. 2016, Columbia University Workshop "S2S extremes", New York, NY: Enhanced Sensitivity of Precipitation Extremes on Surface Temperature in the 2015 Texas Flood (poster presentation)
- Sept. 2015, Columbia University Workshop "Monsoons & ITCZ: the annual cycle in the Holocene and the Future", New York, NY: Modeling interactions between the quasi-geostrophic vertical motion and convection in a single column (poster presentation)
- Jun. 2015, American Meteorological Society's 20th Conference on Atmospheric and Oceanic Fluid Dynamics, Minneapolis, MN: Modeling interactions between the quasi-geostrophic vertical motion and convection in a single column (oral presentation)
- May 2015, California Institute of Technology workshop "Monsoons — Past, Present and Future", Pasadena, CA: Modeling interactions between the quasi-geostrophic vertical motion and convection in a single column (oral presentation)
- Apr. 2015, Yale University workshop "Tropical extremes: A workshop on high-impact weather events in monsoon regions", New Haven, CT: the dynamics of extreme precipitation events in Northern Pakistan during monsoon seasons -- a new modeling framework and its applications (oral presentation)
- Jan. 2015, 95th American Meteorological Society Annual Meeting, Phoenix, AZ: Responses of tropical convection to the QBO: cloud resolving simulations and observations (oral presentation)
- Apr. 2014, American Meteorological Society's 31th Conference on Hurricanes and Tropical Meteorology, San Diego, CA: Representing effects of aqueous-phase reactions in shallow cumuli in global models (oral presentation)

- Jan. 2014, University of Hawaii workshop “Tropical Dynamics and the MJO”, Honolulu, HI: A new multi-plume convective model based on buoyancy sorting (oral presentation)
- May 2013, the Sixth Northeast Tropical Workshop, Rensselaerville, NY: The Role of In-Cloud Heterogeneity in Nonlinear Chemistry (oral presentation)
- Dec. 2012, 2012 American Geophysical Union Annual Fall meeting, San Francisco, CA: Beyond bulk entrainment and detrainment rates: a new framework for diagnosing mixing in cumulus convection (oral presentation)
- Apr., 2012, American Meteorological Society’s 30th Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL: Probing the Response of Convection to Large-scale Temperature Anomalies with a Lagrangian Particle Dispersion Model (oral presentation)
- Jun. 2011, American Meteorological Society’s 18th Conference on Atmospheric and Oceanic Fluid Dynamics, Spokane, WA: Understanding the Response of Shallow Convection to Perturbations using LES and a Stochastic Parcel Model (poster presentation)
- May 2011, the Fifth Northeast Tropical Workshop, Dedham, MA: The Response of Shallow Convection to Temperature Perturbations (oral presentation)
- May 2010, American Meteorological Society’s 29th Conference on Hurricanes and Tropical Meteorology, Tucson, AZ: Observational Evaluation of a Convective Quasi-Equilibrium View of Monsoons (oral presentation)

(updated: Feb. 2019)