



南京大学大气科学学院
School of Atmospheric Sciences, Nanjing University

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Dr. Ming Bao



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News (within one year)

- 2019.12 Journal Club 第46期: [The Downward Influence of Sudden Stratospheric Warmings: Association with Tropospheric Precursors](#) (Dec 19, 12:45-13:45 in room B501);
- 2019.11 王泽铭被录取为南京大学2020年推免直博士生;
- 2019.10 研究组紫金山秋游;
- 2019.08 博士生谭鑫论文"[Energetics of the Western Hemisphere circulation pattern](#)" Journal of Climate接收发表;
- 2019.07 谭鑫硕士学位论文被评为2019年南京大学优秀硕士学位论文;
- 2019.06 杨鹏坤本科毕业论文"2018和2019年平流层爆发性增温事件的初步分析"通过答辩, 即将攻读硕士研究生;
- 2019.05 研究组千岛湖春游;
大学生创新训练计划项目正式立项: 王泽崧/王泽铭/王仲睿"用自组织映射方法对大气流型的聚类分析"获批省级重点项目资助; 刘冠宇"2018年夏季欧洲极端高温事件的气候分析"获批省级重点项目资助;
- 2019.04 欢迎马晨明同学加入研究组攻读2019级硕士研究生;
- 2019.01 欢迎杨鹏坤同学加入研究组做本科毕业论文(与任雪娟教授联合指导做平流层对流层相互作用研究);
- 2018.12 博士生谭鑫获"[2018年海峡两岸青年学术研讨会暨全国大气科学研究生学术论坛](#)"报告一等奖;

Research Interests

General Circulation of the Atmosphere
Tropical-Extratropical Teleconnection
Stratosphere-Troposphere Dynamical Coupling
East Asian Monsoon

Opportunities

I am always looking for prospective postdocs, graduate students and undergraduate students who are interested in research opportunities and have strong work enthusiasm. Please feel free to email me for more information!

研究组以“立德树人、卓越创新、家国情怀、世界眼光”为工作理念, 欢迎对大气环流和气候动力学方向感兴趣(有科研志向、能专注踏实、愿交流合作)的学生加入研究组!

每年计划招收:

直博研究生或硕博研究生1名
大学生创新训练计划项目1组

Education

Ph.D. Department of Atmospheric Sciences, Nanjing University (2004) Advisors: [Prof. Yunqi Ni](#), [Prof. Jifan Chou](#)
B.S. Department of Atmospheric Sciences, Nanjing University (1999)

Professional Experience

2011-present. Associate Professor, School of Atmospheric Sciences, Nanjing University
2013 - 2015. Visiting Scholar, Department of Atmospheric Sciences, University of Washington, Seattle, USA
(Host professors: [Prof. Dennis L. Hartmann](#) and [Prof. John M. Wallace](#))
2008 - 2011. Lecturer, School of Atmospheric Sciences, Nanjing University
2004 - 2008. Assistant Researcher, Institute of Atmospheric Physics (Research advisor: [Prof. Ronghui Huang](#))

Classes

- 17010580 (U) Introduction to Climate Dynamics (Spring, 2020)
- 17010450 (UG) Tropical Meteorology (Fall, 2015~2018; Spring, 2019)
- 20000030 (U) Introduction to Earth Science and Resource Environment (Fall, 2017-2019)
- 17010040 (U) Physical Climatology (Spring, 2009~2013, 2018~2019)
- 070601D17 (G) The Frontier Issues of Atmospheric Sciences (Lectures, 2017)

Group Members



(2019年11月昆明，和学生参加会议后在云大附近光宗三号)

- Yiming Wang, Ph.D. student, 09/2020-, Tropical-Extratropical Teleconnection
- Xin Tan, Ph.D. student, 09/2018-, Dynamics of Extratropical Atmospheric Teleconnection
- Chenming Ma, graduate student, 09/2019-, Storm Track Dynamics
- Pengkun Yang, graduate student, 09/2019-, Stratosphere-Troposphere Dynamical Coupling (co-advised with [Prof. Xuejuan Ren](#))

Zesong Wang, Yiming Wang, and Zhongrui Wang, undergraduate students, 11/2018-, Cluster Analysis of Atmospheric Regimes by the Self-Organizing Map method
Guanyu Liu, undergraduate student, 11/2018-, Climate Analysis of the 2018 Summer Heatwave in Europe

Former Students

M.S. Xin Tan (2015-2018 "[西半球环流型的动力学研究](#)")-Ph.D. student, NJU
B.S. Pengkun Yang (2019)-M.S. student, NJU; Shangyong Shi (2018)-Ph.D. student, FSU; Yunsheng Ye (2017)-M.S. student, NJU; Kai Huang (2016)-Ph.D. student, GMU; Ying Sun (2013)-M.S., McGill; Jinpeng Chen (2013); Lei Song (2011)-Ph.D., IAP; [Jia He](#) (2011)-Ph.D., Gatech; [Huang Yang](#) (2010)-Ph.D., Cornell; [Ye Liu](#) (2010)-Ph.D., NJU; Jun Wang (2009)-Ph.D., IAP; Kai Wang (2009)

Grants

NSFC 2017-2020 (PI, ¥ 680,000): Formation and maintenance mechanisms of a Northern Hemisphere wintertime low-frequency flow regime
NSFC 2013-2016 (PI, ¥ 700,000): The effect and modulation mechanisms of QBO on the East Asian winter monsoon
NSFC 2012-2015 (PI, ¥ 650,000): Variational characteristics of the South Asian waveguide and its impacts on the wintertime wet and cold climate anomaly in southern China
NSFC 2008-2010 (PI, ¥ 190,000): Large-scale circulation characteristics and climate background of the occurring persistent heavy rain events in the Huaihe River valley

Publications

(Supervised students are underlined)

Submitted/In preparation:

Bao, M., X. Tan, and P. Yang: Causes of the reemergence of the Antarctic sudden stratospheric warming in 2019. In prep.

Peer-reviewed:

Tan, X., M. Bao, and X. Ren, 2019: Energetics of the Western Hemisphere circulation pattern. *J. Climate*, 32, 7857-7870, doi:10.1175/JCLI-D-19-0211.1. [Official link](#) **【[西半球环流型形成维持的能量学机制](#)】**

Tan, X., M. Bao, D. L. Hartmann, and P. Ceppi, 2017: The role of synoptic waves in the formation and maintenance of the Western Hemisphere circulation pattern. *J. Climate*, 30, 10259-10274, doi:10.1175/JCLI-D-17-0158.1. [Official link](#) **【[首次命名"西半球环流型"; 西半球环流型形成维持的波动机制](#)】**

Bao, M., X. Tan, D. L. Hartmann, and P. Ceppi, 2017: Classifying the tropospheric precursor patterns of sudden stratospheric warmings. *Geophys. Res. Lett.*, 44, 8011-8016, doi:10.1002/2017GL074611. [Official link](#) **【[平流层爆发性增温的三类对流层前兆环流型](#)】**

Bao, M., and J. M. Wallace, 2015: Cluster analysis of Northern Hemisphere wintertime 500-hPa flow regimes during 1920–2014. *J. Atmos. Sci.*, 72, 3597-3608, doi:10.1175/JAS-D-15-0001.1. [Official link](#) **【[一个新的北半球冬季大气低频流型](#)】**

Bao, M., and D. L. Hartmann, 2014: The response to MJO-like forcing in a nonlinear shallow-water model. *Geophys. Res. Lett.*, 41, 1322-1328, doi:10.1002/2013GL057683. [Official link](#) **【[美国地球物理学会研究亮点](#)】** **【[NJU科技动态](#)】**

Bao, M., and R. Han, 2009: Delayed impacts of the El Niño episodes in the central Pacific on the summertime climate anomalies of eastern China in 2003 and 2007. *Adv. Atmos. Sci.*, 26, 553-563, doi:10.1007/s00376-009-0553-7. [Official link](#)

Bao, M., 2009: Causes of deficit Meiyu over the middle and lower reaches of the Yangtze River in the last several years viewed from medium range weather process. *Chin. J. Atmos. Sci.*, 33, 708-718, doi:10.3878/j.issn.1006-9895.2009.04.05. [Official link](#)

Bao, M., 2008: Relationship between persistent heavy rain events in the Huaihe River valley and the distribution pattern of convective activities in the tropical western Pacific warm pool. *Adv. Atmos. Sci.*, 25, 329-338, doi:10.1007/s00376-008-

0329-5. [Official link](#)

Bao, M., 2008: Comparison of the effects of anomalous convective activities in the tropical western Pacific on two persistent heavy rain events in South China. *J. Tropical Meteor.*, 14, 28-32. [Official link](#)

Bao, M., 2007: The statistical analysis of the persistent heavy rain in the last 50 years over China and their backgrounds on the large scale circulation. *Chin. J. Atmos. Sci.*, 31, 779-792, doi:10.3878/j.issn.1006-9895.2007.05.03. [Official link](#) 【中国暴雨气候学研究; 被引用超过100次】

Bao, M., and R. Huang, 2006: Characteristics of the interdecadal variations of heavy rain over China in the last 40 years. *Chin. J. Atmos. Sci.*, 30, 1057-1067, doi:10.3878/j.issn.1006-9895.2006.06.01. [Official link](#) 【中国暴雨气候学研究; 被引用超过100次】

Bao, M., and R. Huang, 2005: Intercomparison of the interdecadal variations of summer precipitation in China simulated by AOGCMS from IPCC-DDC. *J. Tropical Meteor.*, 11, 10-22. [Official link](#)

Bao, M., Y. Ni, and J. Chou, 2004: The experiment of monthly mean circulation prediction using the analogy-dynamical model. *Chinese Science Bulletin*, 49, 1296-1300, doi:10.1360/03wd0497. [Official link](#) 【首次将相似原理结合到一个复杂大气模式中进行月预报试验】

Conferences/Workshops/Seminars

- 2019 10th MEC workshop (Nov 24-25), Guangzhou // 6th Nonlinear Atmospheric and Oceanic Sciences Symposium (Oct 14-15), Huzhou (talk) // AOGS 16th Annual Meeting (Jul 28-Aug 2), Singapore // 27th IUGG General Assembly (Jul 8-16), Montreal, Canada // East Asian Climate 14th workshop (Apr 27-29), Hongkong
- 2018 Visiting the Hong kong University of Science and Technology (Dec 10-14), Hongkong // SPARC General Assembly 2018 (Oct 1-5), Kyoto, Japan // 3rd Congress of China Geodesy and Geophysics (Aug 22-24), Lanzhou // AOGS 15th Annual Meeting (Jun 3-8), Honolulu, Hawaii, USA
- 2017 Department of Atmospheric and Oceanic Sciences, Peking University, Beijing (seminar, Nov 1) // 5th Nonlinear Atmospheric and Oceanic Sciences Symposium (Sep 22-23), Wuhan (talk) // IAPSO-IAMAS-IAGA Joint Assembly 2017 (Aug 27-Sep 1), Cape Town, South Africa // 21th AMS AOFD conference and 19th Middle Atmosphere conference (Jun 25-30), Portland, USA // 97th AMS Annual Meeting (Jan 22-27), Seattle, USA
- 2016 Department of Physics, University of Oxford, Oxford, UK (seminar, Apr 29) // Department of Meteorology, University of Reading, Reading, UK (seminar, Apr 25) // EGU General Assembly 2016 (Apr 17-22), Vienna, Austria
- 2015 Department of the Geophysical Sciences, University of Chicago, USA (seminar, Aug 17) // Zhu Kezhen Forum, Chinese Culture University, Taipei, Taiwan (talk, July) // Department of Atmospheric Sciences, University of Washington, Seattle, USA (seminar, Apr 10) // 95th AMS Annual Meeting (Jan 4-8), Phoenix, USA
- 2014 AGU Fall Meeting (Dec 15-19), San Francisco, USA
- 2010 Western Pacific Geophysics Meeting (WPGM, Jun 22-25), Taipei, Taiwan
- 2009 Pan-Pacific Climate/Weather Collaboration Meeting, University of Alaska Fairbanks, USA (talk, Sep 8-10)
- 2007 East Asian monsoon workshop, Fukuoka, Japan (talk, November)
- 2005 East Asian monsoon workshop, YongPyong, Korea (talk, October)

Academic Services

Reviewer for *JAS*, *JGR*, *GRL*, *Clim.Dyn.*, *DYNAT*, *Chin.JAS*.

Reviewer for NSFC

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[气候预测研究实验室](#) [雷达实验室](#) [大气环境研究中心](#) [中尺度动力与台风团队](#)

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