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Research Interests

- Advancing data assimilation methodologies for multiscale dynamical systems
- Dynamics and predictability of complex systems and identifying key physical processes
- Improving the numerical simulation and prediction of complex dynamical systems

Educational Background

2018: Ph.D. Meteorology, Computational Science (minor), Pennsylvania State University

Dissertation: “Ensemble data assimilation for the analysis and prediction of multiscale tropical weather systems”.

Advisor: Dr. Fuqing Zhang

2012: M.S. Meteorology, Peking University

Thesis: “Tropical cyclone structural changes in response to ambient moisture perturbations”.

Advisor: Dr. Qinghong Zhang

2009: B.S. Atmospheric Sciences, Peking University

Professional Experiences

Research

2020-present

Researcher, Data Assimilation group, NERSC

2018-2020 Postdoctoral Fellow, Advanced Study Program, NCAR

2012-2018 Graduate Research Assistant, Pennsylvania State University

2009-2012 Graduate Research Assistant, Peking University

Academic Employment (Another Style)

Distinction

Academic Service

Reviewer

Publication

1. **Ying, Y.**, J. L. Anderson, and L. Bertino, 2022: Improving vortex position accuracy with a new multiscale alignment ensemble filter. *Mon. Wea. Rev.*, in review.

2. Tao, D., P. J. van Leeuwen, M. Bell, and **Y. Ying**, 2022: Dynamics and predictability of tropical cyclone rapid intensification in ensemble simulations of Hurricane Patricia (2015). *J. Geophys. Res. Atmos.*, 127, e2021JD036079. doi:10.1029/2021JD036079.
3. Korosov, A., P. Rampal, **Y. Ying**, E. Olason, and T. Williams, 2022: Towards improving short-term sea ice predictability using deformation observations. *The Cryosphere*, in review.
4. **Ying, Y.**, 2020: Assimilating observations with spatially correlated errors using a serial ensemble filter with a multiscale approach. *Mon. Wea. Rev.*, 148, 3397-3412. doi:10.1175/MWR-D-19-0387.1.
5. **Ying, Y.**, 2019: A multiscale alignment method for ensemble filtering with displacement errors. *Mon. Wea. Rev.*, 147, 4553-4565. doi:10.1175/MWR-D-19-0170.1.
6. **Ying, Y.**, and F. Zhang, 2018: Potentials in improving predictability of multiscale tropical weather systems evaluated through ensemble assimilation of simulated satellite-based observations. *J. Atmos. Sci.*, 75, 1675-1698. doi:10.1175/JAS-D-17-0245.1.
7. **Ying, Y.**, F. Zhang, and J. L. Anderson, 2018: On the selection of localization radius in ensemble filtering for multiscale quasi-geostrophic dynamics. *Mon. Wea. Rev.*, 146, 543-560. doi:10.1175/MWR-D-17-0336.1.
8. **Ying, Y.**, and F. Zhang, 2017: Practical and intrinsic predictability of multi-scale weather and convectively-coupled equatorial waves during the active phase of an MJO. *J. Atmos. Sci.*, 74, 3771-3785. doi:10.1175/JAS-D-17-0157.1.
9. **Ying, Y.**, and F. Zhang, 2015: An adaptive covariance relaxation method for ensemble data assimilation. *Quart. J. Roy. Meteor. Soc.*, 141, 2898-2906. doi:10.1002/qj.2576.
10. Wang, S., A. H. Sobel, F. Zhang, Y. Sun, **Y. Ying**, and L. Zhou, 2015: Regional simulation of the October and November MJO events observed during the CINDY/DYNAMO field campaign at gray zone resolution. *J. Climate*, 28, 2097-2119. doi:10.1175/JCLI-D-14-00294.1.
11. Hu, H., Q. Zhang, B. Xie, **Y. Ying**, J. Zhang, and X. Wang, 2014: Predictability of an advection fog event over North China. Part I: Sensitivity to initial condition differences. *Mon. Wea. Rev.*, 142, 1803-1822. doi:10.1175/MWR-D-13-00004.1.
12. Zhang, J., T. Zhu, Q. Zhang, C. Li, and H. Shu, **Y. Ying**, Z. Dai, X. Wang, 2012: The impact of circulation patterns on regional transport pathways and air quality over Beijing and its surroundings. *Atmos. Chem. Phys.*, 12, 5031-5053. doi:10.5194/acpd-11-33465-2011.
13. **Ying, Y.**, and Q. Zhang, 2012: A modeling study on tropical cyclone structural changes in response to ambient moisture variations. *J. Meteorol. Soc. Japan*, 90, 755-770. doi:10.2151/jmsj.2012-512.
14. Du, Y., Q. Zhang, **Y. Ying**, and Y. Yang, 2012: Characteristics of low-level jets in Shanghai during the 2008-2009 warm seasons as inferred from wind profiler radar data. *J. Meteorol. Soc. Japan*, 90, 891-903. doi:10.2151/jmsj.2012-603.
15. Xie, B., Q. Zhang, and **Y. Ying**, 2011: Trends in precipitable water and relative humidity in China: 1979-2005. *J. Applied Meteorol. Climatol.*, 50, 1985-1994. doi:10.1175/2011JAMC2446.1.

Conference and Seminar Presentations