

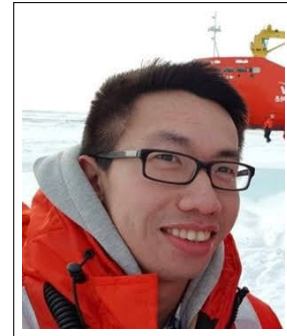
HAN TANG

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RESEARCH INTERESTS

Atmospheric Science Understanding the physical mechanism and processes that drive generation and evolution of Arctic storms/cyclones in the decreasing sea ice environment through comprehensive data analysis and climate model simulations.

SKILLS AND EXPERTISE

Fortran Proficient in Fortran, with experience in maintaining legacy codebases and adept at leveraging modern features to develop efficient parallel scientific applications. Contributed to multiple open-source projects, including the [Fortran language server protocol](#).

WRF, CESM Skilled in the execution and automation of regional and global climate models, including WRF and CESM, on high-performance superclusters such as [Perlmutter](#).

Others Utilizing programming languages/tools, including Python, Julia, LaTeX, C and MATLAB in my daily research activities.

RESEARCH AND TEACHING EXPERIENCE

2023 - now *Teaching Assistant* Physics Department, University of Alaska Fairbanks

2020 - 2023 *Research Assistant* Physics Department, University of Alaska Fairbanks

2016 - 2020 *Teaching Assistant* Physics Department, University of Alaska Fairbanks

EDUCATION

May 2024 - now (in progress) **PH.D.** in Atmospheric Science, North Carolina State University

Aug 2020 - May 2024 *Pursued Ph.D.* in Physics Department, University of Alaska Fairbanks

Aug 2016 - May 2020 **M.S.** in Space Physics, University of Alaska Fairbanks

Aug 2012 - May 2016 **B.S.** in Physics, New Mexico State University

Aug 2010 - May 2012 *Studied music* in Music Department, Southeastern Oklahoma State University

SCIENTIFIC EXPEDITION

Aug 2020, 2021 Radiosonde observation during Arctic cruises aboard the Ice Breaker Research Vessel (IBRV) Araon.

AWARD

- May 2024 Invited to the 2024 E3SM Tutorial Workshop.
- Fall 2023 - Spring 2024 Teaching Assistant of the Year.
- Aug 2022 The travel award granted to 2022 CESM Tutorial at Boulder, Colorado from August 8th to August 12th, 2022.
- Apr 2016 H. Bartel and Doris Williams Undergraduate Physics Award

PUBLICATIONS

JOURNAL PUBLICATIONS

- Tang, H.**, Zhang, X., Zhang, J., & Kim, J.-H. (2024). Unraveling dynamic and thermodynamic processes driving an arctic intense cyclone development in a complex circulation setting. (*To be submitted*).
- Zhang, X., **Tang, H.**, Zhang, J., Walsh, J. E., Roesler, E. L., Hillman, B., Ballinger, T. J., & Weijer, W. (2023). Arctic cyclones have become more intense and longer-lived over the past seven decades. *Communications Earth & Environment*, 4, 348. <https://doi.org/10.1038/s43247-023-01003-0>
- Zhang, X., Fu, Y., Han, Z., Overland, J. E., Rinke, A., **Tang, H.**, Vihma, T., & Wang, M. (2022). Extreme cold events from east asia to north america in winter 2020/21: Comparisons, causes, and future implications. *Advances in Atmospheric Sciences*, 39, 553–565. <https://doi.org/10.1007/s00376-021-1229-1>
- Peng, L., Zhang, X., Kim, J.-H., Cho, K.-H., Kim, B.-M., Wang, Z., & **Tang, H.** (2021). Role of intense arctic storm in accelerating summer sea ice melt: An in situ observational study. *Geophysical Research Letters*, 48(8), e2021GL092714. <https://doi.org/10.1029/2021GL092714>
- Solomon, A., Heuzé, C., Rabe, B., Bacon, S., Bertino, L., Heimbach, P., Inoue, J., Iovino, D., Mottram, R., Zhang, X., Aksenov, Y., McAdam, R., Nguyen, A., Raj, R. P., & **Tang, H.** (2021). Freshwater in the arctic ocean 2010–2019. *Ocean Science*, 17(4), 1081–1102. <https://doi.org/10.5194/os-17-1081-2021>
- Tang, H.** (2020). Two-dimensional bernstein-greene-kruskal modes in a magnetized plasma with kinetic effects from electrons and ions. *Thesis, University of Alaska Fairbanks*, 81 pages. <http://uaf.idm.oclc.org/login?url=https://www.proquest.com/dissertations-theses/two-dimensional-bernstein-greene-kruskal-modes/docview/2408270508/se-2>
- Zhang, X., Fu, Y., Guan, Z., **Tang, H.**, Wang, G., Wang, Z., Wu, P., & Yang, X. (2020). Influence of arctic warming amplification on eurasian winter extreme weather and climate: Consensus, open questions, and debates. *Journal of The Meteorological Sciences*, 40(5), 596–604. <https://doi.org/10.3969/2020jms.0079>

CONFERENCE PRESENTATIONS

- Tang, H.**, Zhang, X., Zhang, J., & Kim, J.-H. (December 11-15, 2023). Identifying and comparing dynamics driving different types of arctic cyclones. *American Geophysical Union 2023, San Francisco, CA & Online Everywhere*. <https://agu.confex.com/agu/fm23/meetingapp.cgi/Paper/1430823>

- Zhang, X., Coates, D., Easterling, D. R., Kunkel, K., Schreck, C. J., **Tang, H.**, & Uehling, J. (December 11-15, 2023). Identifying driving mechanisms for recently increased conus summer heatwave events. *American Geophysical Union 2023, San Francisco, CA & Online Everywhere*. <https://agu.confex.com/agu/fm23/meetingapp.cgi/Paper/1338497>
- Ballinger, T., Zhang, X., **Tang, H.**, Polyakov, I. V., Doyle, J. D., & Finocchio, P. (December 11-15, 2023). Sea ice-ocean-atmosphere interactions associated with a pacific arctic cyclone observed during the onr thinice field campaign in late summer of 2021. *American Geophysical Union 2023, San Francisco, CA & Online Everywhere*. <https://agu.confex.com/agu/fm23/meetingapp.cgi/Paper/1338497>
- Tang, H.**, Zhang, J., & Zhang, X. (December 12-16, 2022). Dynamic structures and mechanisms of an intense arctic cyclone in summer 2016. *American Geophysical Union 2022, Chicago, IL & Online Everywhere*. <https://agu.confex.com/agu/fm22/meetingapp.cgi/Paper/1180352>
- Zhang, X., **Tang, H.**, Zhang, J., Walsh, J. E., Roesler, E. L., Hillman, B. R., & Ballinger, T. (December 12-16, 2022). Continuing intensification of arctic cyclone activity. *American Geophysical Union 2022, Chicago, IL & Online Everywhere*. <https://agu.confex.com/agu/fm22/meetingapp.cgi/Paper/1095296>
- Zhang, X., **Tang, H.**, Zhang, J., Walsh, J. E., Roesler, E. L., & Hillman, B. R. (December 12-16, 2022). Arctic cyclones in cmip6 historical simulations. *American Geophysical Union 2022, Chicago, IL & Online Everywhere*. <https://agu.confex.com/agu/fm22/meetingapp.cgi/Paper/1095803>
- Zhang, J., Zhang, X., Walsh, J., **Tang, H.**, & Bush, M. (December 13-17, 2021). Sensitivities of simulated arctic cyclone to different representations of model physics within wrf. *American Geophysical Union 2021, New Orleans, LA & Online Everywhere*. <https://agu.confex.com/agu/fm21/meetingapp.cgi/Paper/985686>
- Tang, H.**, Zhang, J., & Zhang, X. (December 13-17, 2021). Impacts of spatial resolution on an intense arctic cyclone simulations. *American Geophysical Union 2021, New Orleans, LA & Online Everywhere*. <https://agu.confex.com/agu/fm21/meetingapp.cgi/Paper/904727>
- Zhang, X., Hillman, B., Roesler, E., **Tang, H.**, Walsh, J., & Zhang, J. (December 13-17, 2021). Arctic cyclones in reanalyses and e3sm simulations: Changes, driving mechanisms, and ice-ocean impacts. *American Geophysical Union 2021, New Orleans, LA & Online Everywhere*. <https://agu.confex.com/agu/fm21/meetingapp.cgi/Paper/973092>
- Ng, C.-S., & **Tang, H.** (December 1-17, 2020). Kinetic flux rope solutions with non-boltzmann electron and ion distributions. *American Geophysical Union 2020, Online Everywhere*. <https://agu.confex.com/agu/fm20/meetingapp.cgi/Paper/748301>
- Ng, C.-S., & **Tang, H.** (December 10-14, 2018). Kinetic flux rope solutions for realistic electron/ion temperature ratios. *American Geophysical Union 2018, Washington, D.C., United States*. <https://agu.confex.com/agu/fm18/meetingapp.cgi/Paper/456428>