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## Personal information

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## Professional appointments

Sep, 2020 - present **Postdoctoral Research Associate**,  
*Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado, National Oceanic Atmospheric Administration (NOAA), Physical Sciences Lab (PSL), Boulder*,  
Research foci: Tropical-extratropical interaction, Madden Julian Oscillation.  
Advisors: George Kiladis, Stefan Tulich

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## Education

Sep. 2015 - Aug. 2020 **PhD. in Geophysical Sciences**, *The University of Chicago*, USA,  
Thesis: Dynamics of extratropical storm tracks on different timescales.  
Advisors: Tiffany A. Shaw, Noboru Nakamura

Jun. 2013 - Apr. 2015 **MSc. in Physics**, *Indian Institute of Technology (IIT), Kanpur*, India,  
Thesis: Instabilities and pattern formation in Rayleigh Bénard Convection.  
Advisor: Mahendra K. Verma

Jun. 2010 - Apr. 2013 **BSc. in Physics (Honours)**, *Miranda House, University of Delhi*, India.

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## Selected Honours and awards

2021 **Early career presentation award**, *International workshop for mid-latitude air-sea interaction, CLIVAR*.

2020 **Alternate fellow (waitlist)**, *NOAA C&GC postdoc fellowship, USA*.

2014 **Summer Research Fellowship**, *Indian Academy of Sciences*.

2013 **Science Quest Award**, *Centre for Science Education and Communication (CSEC), University of Delhi, India*.

2011 **Meera Singla Memorial Scholarship**, *for excellence in Mathematical Physics, University of Delhi, India*.

2011 - 2015 **KVPY Fellowship**, *Young Scientist Incentive Plan, Department of Science and Technology, Government of India*.

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## Publications

### In Preparation

- ~ **Barpanda, P.**, S. Tulich, J.Dias, and G. Kiladis: The role of subtropical Rossby waves in Amplifying the divergent circulation of the Madden Julian Oscillation, *in prep. for Journal of Climate*, anticipated date of submission is Nov, 2022.
- ~ **Barpanda, P.**, and N. Nakamura: Local wave activity budget of persistent anomalies in the jet stream and their relevance for atmospheric blocking in the Northern Hemisphere winter, *to be submitted in Journal of Atmospheric Sciences*, anticipated date of submission is Oct.,2022  
Non-peer reviewed pre-print available in Chapter 4 of P. Barpanda's PhD dissertation (<http://knowledge.uchicago.edu/record/2556>)

## Peer-reviewed

- 2020 **Barpanda, P.**, and T. A. Shaw: Surface fluxes modulate the seasonality of zonal-mean storm tracks. *J. Atmos. Sci.*, 77, 753–779.  
*This study used the idealized aquaplanet experiments using Isca: a GFDL atmospheric model with slab ocean and realistic radiation scheme.*
- 2019 Paradise, A., C. B. Rocha, **P. Barpanda**, and N. Nakamura: Blocking statistics in a varying climate: Lessons from a “traffic jam” model with pseudostochastic forcing. *J. Atmos. Sci.*, 76, 3013–3027.  
*The main results of this paper emerged from a 7-day hackathon during Rossbypalooza, a student-led summer school at the University of Chicago in June 2018, based on the theme of “Understanding climate through simple models”.*
- 2018 Shaw, T.A., **P. Barpanda**, and A. Donohoe, 2018: A Moist Static Energy Framework for Zonal-Mean Storm-Track Intensity. *J. Atmos. Sci.*, 75, 1979–1994.
- 2017 **Barpanda, P.**, and T. A. Shaw: Using the Moist Static Energy Budget to Understand Storm-Track Shifts across a Range of Time Scales. *J. Atmos. Sci.*, 74 (8), 2427–2446.

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## Conference presentations and invited seminars

*\*\* indicates invited seminar, \* indicates abstract selected as a talk.*

- 2022 \*What causes atmospheric blocks? - A new perspective using the finite amplitude local wave activity theory. *Midlatitude Storm-track workshop, CAES-CNRS site on Oléron Island, France.*
- 2022 \*Role of subtropical momentum fluxes in maintaining the Kelvin Mode Circulation component of the Madden-Julian Oscillation. Presented in – 102<sup>nd</sup> American Meteorological Society (AMS) Annual meeting, 35<sup>th</sup> AMS Conference on Hurricanes and Tropical Meteorology, 23rd Conference on Atmospheric and Oceanic Fluid Dynamics (AOFD) and PSL Flash Seminar in National Oceanic Atmospheric Administration.
- 2021 \*\*What causes atmospheric blocks? - A new perspective using the finite amplitude local wave activity theory. *NYU Courant, Center for Atmosphere Ocean Science, USA (Invited seminar).*
- 2020 What controls the hemispheric asymmetry in the seasonality of extratropical storm track Intensity? - New Insights from the moist static energy budget. *International workshop for mid-latitude air-sea interaction, CLIVAR - Received early-career presentation award.*
- 2020 \*\*What controls the hemispheric asymmetry in the seasonality of extratropical storm track Intensity? - New Insights from the moist static energy budget. *Geophysical Fluid Dynamics Lab, Princeton University, USA (Invited seminar).*
- 2020 \*Surface fluxes modulate the seasonal intensity of zonally symmetric stormtrack. 22<sup>nd</sup> Conference on Atmospheric and Oceanic Fluid Dynamics (AOFD).
- 2019 Blocking statistics in a varying climate: lessons from a 'traffic jam' model with pseudostochastic forcing. 22<sup>nd</sup> AOFD (Poster).
- 2018 Seasonality of zonally symmetric storm tracks. *American Geophysical 2018 Union (AGU) (Poster).*
- 2018 Surface fluxes control the seasonal intensity of zonally symmetric stormtrack. *Stormtrack workshop, Utö, Stockholm, Sweden.*
- 2017 \*Using the moist static energy budget to understand stormtrack shifts across a range of time scales. *AGU 2017 (Poster), 21st conference on AOFD (Oral presentation).*
- 2014 Physics behind Mantle Convection. *SEG-SPG Convention, National Geophysical Research Institute, India.*
- 2014 Rayleigh-Nusselt number scaling – Implications for heat transport by mantle plume conduits. *Summer Research Symposium, Tata Institute of Fundamental Research and Centre for Interdisciplinary Sciences, Hyderabad, India.*

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## Teaching and supervision

- June. 2022 - Aug. 2022 Co-mentored a summer research intern under the RECCS program (The Research Experience for Community College Students) at CIRES. *The student will present their research in the upcoming AGU Fall meeting, 2022 on 'Madden-Julian Oscillation Impact on Hawaiian Waves'.*
- Spring 2018/19 Natural Hazards, *Graduate teaching assistant for undergraduates.*
- Fall 2016/18 Climate foundations, *Graduate teaching assistant for graduate students.*
- Winter 2015/16/17 Global warming, *Graduate teaching assistant for undergraduates.*

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## Workshops and summer schools

*\*\* indicates merit-based selection*

- 2022 Midlatitude stormtrack workshop, *CAES-CNRS site on Oléron Island, France (Received partial travel grant of 500€).*
- 2018, 2016 Rossbypalooza summer school, *The University of Chicago, Chicago, USA.*
- 2018 Midlatitude stormtrack workshop, *Utö, Stockholm, Sweden\*\*.*
- 2017 Les Houches School of Physics on Fundamental aspects of turbulent flows in climate dynamics, *Les Houches, France\*\*.*
- 2017 Advanced Climate Dynamic Course on The Dynamics of the Seasonal Cycle, *Rondavassbu, Norway\*\*.*
- 2017 NCAR CESM (National Center for Atmospheric Research, Community Earth System Model) tutorial, *Boulder, Colorado\*\*.*
- 2015 GdR Dynamo, *International Centre for Theoretical Sciences – TIFR, Bangalore, India.*

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## Professional services

- 2018-present Reviewer in Journal of Geophysical Research, Journal of Atmospheric Sciences and Journal of Climate.
- 2022 Chaired a session on Tropical waves, *35th Conference on Hurricanes and Tropical Meteorology.*
- 2021 Coordinator of journal club for the Tropical dynamics group, CIRES/NOAA, PSL.
- 2019 Chaired a session on Waves, mean flow and balances, *22nd AOFD.*
- 2018 Co-convenor of a session on Climate Variability and Seasonality Across Time and Spatial Scales, *European Geophysical Union (EGU) meeting.*
- 2018, 2016 Co-organizer of Rossbypalooza – a student led summer school at the University of Chicago, USA. *As an organizer, I was involved in planning the overall structure of the 2-week programme, budget allocation and inviting guest faculty.*
- 2017-2020 Coordinator of climate journal club in the department of Geophysical Sciences, The University of Chicago.

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## Public outreach

- 2019 Volunteered in Earth Science Day – a departmental outreach activity for local high school students in collaboration with the Schuler Scholar program at the University of Chicago
- Showed experiments in the Geophysical Fluid Dynamics Lab.
  - Held an interactive session on climate dynamics research.
- 2018 Outreach talks in the University of Chicago: Climate and Energy lunch and learn, Economics Department, Women and Gender Minorities meeting in Physics (WAGMIP), Physics Department, Journal club, Computational and Applied Mathematics (CAM) Department.
- 2014-2015 Physics and Math teacher at Siksha Sopan - a Non-Governmental Organization, run by students and faculty of Indian Institute of Technology, Kanpur for underprivileged high school students.

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## Skills

Tools Most to least proficient: Python, Fortran, MATLAB, C++.

Languages English and Indian languages (Hindi, Odia, Bengali).