# NICHOLAS JAMES LUTSKO

Assistant Professor, Scripps Institution of Oceanography
University of California San Diego

Email: nlutsko@ucsd.edu
Website: https://nicklutsko.github.io

Nierenberg Hall 339
Scripps Institution of Oceanography
La Jolla, CA 92093-0226

## Academic Appointments

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|---|---|
| 2019 - present | **Assistant Professor** Scripps Institution of Oceanography, UCSD |
| 2019 - present | **Visiting Fellow** Global Systems Institute, University of Exeter |
| 2017 - 2019 | **Postdoctoral Associate** Department of Earth, Atmosphere and Planetary Sciences, MIT |

## Education

2017 **Ph.D.** Atmospheric and Oceanic Sciences, Princeton University.
2012 **Msci.** Geophysics, Imperial College London.

## Publications

2021

Seeley, J. T., Lutsko, N. J., and Keith, D. W. (2021). Designing a radiative antidote to co2. *Geophysical Research Letters*, 48(1). e2020GL090876

Lutsko, N. J. (2021). The relative contributions of temperature and moisture to heat stress changes under warming. *Journal of Climate*, 34(3):901 – 917

Henry, M., Merlis, T. M., Lutsko, N. J., and Rose, B. E. J. (2021). Decomposing the drivers of polar amplification with a single column model. *Journal of Climate*, 34(6):2355–2365

Lutsko, N. J., Popp, M., Nazarian, R. H., and Albright, A. L. (2021). Emergent constraints on regional cloud feedbacks. *Geophysical Research Letters*, 48(1). e2021GL092934

Hell, M. C., Cornuelle, B. D., Gille, S. T., and Lutsko, N. J. (2021). Time-varying empirical probability densities of southern ocean surface winds: Linking the leading mode to sam and quantifying wind product differences. *Journal of Climate*, 34(13):5497 – 5522

Jeevanjee, N., Koll, D. D. B., and Lutsko, N. J. (2021). Simpson's law and the spectral cancellation of climate feedbacks. *Geophysical Research Letters*, 48(1). e2021GL093699

England, M. R., Eisenman, I., Lutsko, N. J., and Wagner, T. J. W. (2021). The recent emergence of arctic amplification. *Geophysical Research Letters*, 48(1). e2021GL094086

2020

Popp, M., Lutsko, N. J., and Bony, S. (2020b). Weaker links between zonal convective clustering and itcz width in climate models than in observations. *Geophysical Research Letters*, 47. e2020GL090479

Popp, M., Lutsko, N. J., and Bony, S. (2020a). The relationship between convective clustering and mean tropical climate in aquaplanet simulations. *Journal of Advances in Modeling Earth Systems*, 12. e2020MS002070

Lutsko, N. J., Seeley, J. T., and Keith, D. W. (2020). Estimating impacts and tradeoffs in solar geoengineering scenarios with a moist energy balance model. *Geophysical Research Letters*. e2020GL087290

Lutsko, N. J. (2020). Testing the limits and breakdown of the nonacceleration theorem for orographic stationary waves. *Journal of the Atmospheric Sciences*, 77(5):1513 – 1529

2019

Lutsko, N. J. and Popp, M. (2019). Probing the sources of uncertainty in transient warming on different timescales. *Geophysical Research Letters*, 46

Lutsko, N. J., Baldwin, J. W., and Cronin, T. W. (2019a). The impact of large-scale orography on northern hemisphere winter synoptic temperature variability. *Journal of Climate*, 32(18):5799–5814

Lutsko, N. J., Marshall, J., and Green, B. (2019b). Modulation of monsoon circulations by cross-equatorial ocean heat transport. *Journal of Climate*, 32:3471–3485

2018

Lutsko, N. J. and Cronin, T. W. (2018). Increase in precipitation efficiency with surface warming in radiative-convective equilibrium. *Journal of Advances in Modeling Earth Systems*, 10:2992 – 3010

Lutsko, N. J. (2018a). The relationship between cloud radiative effect and surface temperature variability at enso frequencies in cmip5 models. *Geophysical Research Letters*, 45:10599 – 10608

Lutsko, N. J. and Popp, M. (2018). The influence of meridional gradients in insolation and long-wave optical depth on the climate of a gray radiation gcm. *Journal of Climate*, 31:7803–7822

Lutsko, N. J. and Takahashi, K. (2018). What can the internal variability of cmip5 models tell us about their climate sensitivity? *Journal of Climate*, 31:5051 – 5069

Lutsko, N. J. (2018b). The response of an idealized atmosphere to enso-like heating: Superrotation and the breakdown of linear theory. *Journal of the Atmospheric Sciences*, 75:3–20

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| 2017 | Popp, M. and Lutsko, N. J. (2017). Quantifying the zonal-mean structure of tropical precipitation. *Geophysical Research Letters*, 44(18):9470–9478. 2017GL075235 |
| | Lutsko, N. J., Held, I. M., Zurita-Gotor, P., and O'Rourke, A. K. (2017). Lower tropospheric eddy momentum fluxes in idealized models and reanalysis data. *Journal of the Atmospheric Sciences*, 74:3787 – 3797 |
| 2016 | Lutsko, N. J. and Held, I. M. (2016). The response of an idealized atmosphere to orographic forcing: Zonal vs meridional propagation. *Journal of the Atmospheric Sciences*, 73(8):3701 – 3718 |
| 2015 | Lutsko, N. J., Held, I. M., and Zurita-Gotor, P. (2015). Applying the fluctuation–dissipation theorem to a two-layer model of quasi-geostrophic turbulence. *Journal of the Atmospheric Sciences*, 72(8):3161 – 3177 |

## Mentoring

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| **Ph.D. Students** | David Vishny (2020-), Pengcheng Zhang (2020 -, co-advised with Shang-Ping Xie), Jack Bauchop (2021-) |
| **Postdocs** | Momme Hell (2020-2021), Casey Wall (2021, co-advised with Joel Norris) |
| **Undergraduate researchers** | Kylie Kinne (2020, through SURF), Nicole Neumann (2020-2021) |

## Teaching

| | |
|---|---|
| Spring 2021 | **Instructor** SIO 217C: Atmospheric and Climate Sciences III |
| | **Instructor** SIO 87: The Need for Shade |
| Spring 2020 | **Co-Instructor** SIO 217C: Atmospheric and Climate Sciences III |
| Spring 2016 | **Assistant Instructor** Princeton GEO202: Ocean, Atmosphere, and Climate |
| Fall 2015 | **Assistant Instructor** Princeton AOS576: Current Topics in Dynamic Meteorology Large-Scale Structure/Atmosphere. |
| Fall 2011 | **Tutor** Imperial College ESE101: Mathematics for Geoscientists. |

## Department Seminars

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| 2021 | Yale, Fairfield |
| 2020 | UC-Irvine, Imperial College London, UC-Berkeley |
| 2019 | Stanford, McGill, Stockholm University, Caltech, UCLA |
| 2018 | Laboratoire de Meteorologie Dynamique (Paris), NYU, MIT, Cambridge (UK), Oxford, University of Exeter, University of Washington, Harvard University |
| 2017 | University of Chicago, Geophysical Fluid Dynamics Laboratory (dissertation defense), Columbia University |

## Professional Activities

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| **Reviewer** | Nature, Nature Climate Change, PNAS, Journal of the Atmospheric Sciences, Journal of Climate, Climate Dynamics, Geophysical Review Letters, Environmental Research Letters, Earth System Dynamics. |
| 2020-Present | **Organizing Commitee Member** Equilibrium Climate Sensitivity Seminar Series<br>**Commitee Member** NOAA Climate Sensitivity Task Force<br>**Faculty Adviser** Scripps Climate Journal Club |
| 2021 | **EGU Session Convener** *Theme:* Dynamics of the Atmospheric Circulation in Past, Present and Future Climates. |
| 2020 | **EGU Session Convener** *Theme:* Dynamics of the Atmospheric Circulation in Past, Present and Future Climates. |
| 2019 | **EGU Session Convener** *Theme:* Dynamics of the Atmospheric Circulation in Past, Present and Future Climates. |
| 2018 | **AGU Session Convener** *Theme:* Relating the Internal Variability of Climate Systems and their Forced Responses. |
| 2017 | **AOFD Session Chair** *Theme:* Theoretical Advances in AOFD. |
| 2015 | **Organizer** Princeton AOS Workshop. *Theme:* Using Climate Models to Study Extreme Climates. |
| 2013 – 2014 | **Organizer** Princeton AOS student seminar series. |

## Awards and Fellowships

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| 2018 | Heldfest Travel Scholarship |
| 2016 | Rossbypalooza |
| 2014 | Cambridge FDSE Summer School |
| 2013–16 | NSF Graduate Research Fellowship |
| 2012 | Princeton University Centennial Fellowship |
| 2012 | Imperial College Governor's Prize |
| 2009 | EPSRC Summer Research Grant |
| 2008 | R. Stoddard Longcroft Prize at Imperial College |

## Outreach and Contributions to Diversity

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| 2021 | **Classroom Visits** Elementary Institute of Science (through SCOPE) |
| | **Classroom Visits** Colonia La Esperanza Elementary School (Tijuana) |
| 2020 | **Mentor** Scripps Undergraduate Research Fellowship Program |
| 2020-present | **Collaborator** sl-Collective architecture firm |
| 2018-present | **Team Member** with *Emerald Tutu* project |
| 2020 | **Invited Speaker** Cooper Union Climate Week event *Ways of Seeing Green* |
| 2019 | **Interview with Art and America magazine** on visualizing climate change |
| | **Invited Critic** UCLA Advanced Topics Architecture Studio *Deep Freeze* review |
| | **Invited Speaker** Climate Adaptation Forum, organized by Environmental Business Council of New England. |
| 2018 | **Lab Visit Host** with MIT Executive MBA Program. |
| | **First Place** Climate Changed: After Models? Competition. MIT Environmental Solutions Initiatives & Department of Architecture, Urbanism and Planning. |
| 2017-2018 | **Interpreter** Boston Housing Authority (French/Spanish). |