

Pascal Polonik

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Education

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| Ph.D. Earth Sciences Scripps Institution of Oceanography University of California, San Diego | 2018 – 2023 |
| M.S. Meteorology Faculty of Physics, Meteorological Institute Munich Ludwig Maximilian University of Munich | 2015 - 2018 |
| B.A. Atmospheric Science B.S. Environmental Sciences Minor in Energy and Resources University of California, Berkeley | 2011 - 2015 |

Publications

Polonik, P., Ricke, K., Burney, J., The spatial structure of Earth's climate and statistical estimates of climate impacts. *In prep.*

Polonik, P., Ricke, K., Reese, S., Burney, J., 2023. Air Quality Equity in U.S. Climate Policy. PNAS. <https://www.pnas.org/doi/10.1073/pnas.2217124120>

Bluhm, R*, **Polonik, P.***, Hemes, S.K.*, Sanford, C.S.*, Benz, A.B.*, Levy, C.M*, Ricke, K., Burney, A.B. 2022. Disparate air pollution reductions during California's COVID-19 economic shutdown. *Nature Sustainability*. <https://doi.org/10.1038/s41893-022-00856-1>

* equally contributing

Polonik, P., Ricke, K., Burney, J., 2021. Paris Agreement's ambiguity about aerosols drives uncertain health and climate outcomes. *AGU Earth's Future*. <https://doi.org/10.1029/2020EF001787>

Polonik, P., Knote, C., Zinner, T., Ewald, F., Kölling, T., Mayer, B., Andreae, M. O., Jurkat-Witschas, T., Klimach, T., Mahnke, C., Molleker, S., Pöhlker, C., Pöhlker, M. L., Pöschl, U., Rosenfeld, D., Voigt, C., Weigel, R., and Wendisch, M.: The challenge of simulating the sensitivity of the Amazonian cloud microstructure to cloud condensation nuclei number concentrations, *Atmos. Chem. Phys.*, 20, 1591–1605, <https://doi.org/10.5194/acp-20-1591-2020>, 2020.

Polonik, P., Chan, W.S., Billesbach, D.P., Burba, G., Li, J., Nottrott, A., Bogoev, I., Conrad, B. and Biraud, S.C., 2019. Comparison of gas analyzers for eddy covariance: Effects of analyzer type and spectral corrections on fluxes. *Agricultural and Forest Meteorology*, 272, pp.128-142. doi: <https://doi.org/10.1016/j.agrformet.2019.02.010>

Academic Positions

Postdoctoral Scholar July 2023 – Present
UC San Diego, Global School of Policy and Strategy & Scripps Institution of Oceanography
Prof. Katharine Ricke & Prof. Jennifer Burney

Graduate Student Researcher Sept 2018 – June 2023
UC San Diego, Scripps Institution of Oceanography
Prof. Katharine Ricke & Prof. Jennifer Burney
Aerosols, Air Quality Equity, and Climate Impacts: Idealized Modeling to Inform Climate Policy

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| Masters Student Researcher LMU Munich, Meteorological Institute Prof. Dr. Bernhard Mayer & Dr. Christoph Knote <i>Comparison of modeled and measured aerosol-cloud interactions</i> | Oct 2016 – Feb 2018 |
| Graduate Student Researcher Lawrence Berkeley National Lab, Earth Science Division, AmeriFlux Dr. Sebastian Biraud & Dr. Stephen Chan <i>Intercomparison of eddy covariance instruments and spectral corrections</i> | Apr 2016 – Jun 2019 |
| Undergraduate Researcher UC Berkeley, Biometeorology Lab Prof. Dennis Baldocchi <i>Parsing vegetation and open water greenhouse gas fluxes from wetlands</i> | Sept 2013 – May 2015 |

Teaching & Mentorship

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| Instructor - CCS101 - Carbon Neutrality at UCSD | Fall 2022, Fall 2023 |
| Teaching Assistant - SIO90 - Experiences in Oceanic and Atmospheric Sciences | Fall 2021 |
| Undergrad Student Instructor - ESPM 100ES - Intro to Methods of Environmental Science | Spring 2015 |
| Sean Reese – Summer Intern + Research assistant | 2021 – 2022 |
| Amaya Singleton - Summer REU + Bachelor thesis at U of Arizona | 2021 – 2022 |
| Marshall Dean - Summer REU | 2020 |

Service

Reviewer for:

Nature Communications Earth & Environment, Global Environmental Change

Graduate Student Representative and/or Committee Member for:

Scripps Sustainability Committee (ex-officio), Marine Sciences Physical Planning Committee (SIO), Transportation Advisory Committee to the Vice Chancellor (UCSD), Climate Action and Policy Committee (UCSD Grad Student Association), Department Curriculum Review (Climate Science, SIO), Joint SIO/HDSI faculty hire, AGAGE faculty hire, Grad Student Council (Climate Science, SIO)

Other Qualifications

Honors and Awards:

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| Jean Fort Dissertation Prize (UC San Diego) | 2023 |
| Emerging Scholars Award for Excellence in Research and Public Policy (UC Sacramento Center) | 2023 |
| Presentation Award (Scripps Student Symposium) | 2022 |
| Student Presentation Award (AGU OSPA, GeoHealth) | 2020 |
| Kenneth L. Babcock Prize in Environmental Science | 2015 |

Computing

Research: Python, MATLAB, R
Summer school: CESM Tutorial (2020)
Coursework: ArcGIS, C

Workshops/Conferences

Marine Geoengineering Workshop (UC San Diego, 2023), Conference of Parties (COP27, Egypt), Workshop on Climate and Energy Decision Making (Carnegie Mellon, 2022), AGU Fall Meeting (2016, 2019-2022)

Languages

English, German

Talks

- 2023: *Uncertainties and Tradeoffs from Aerosol Changes Under Climate Policy* (invited, AGU Fall Meeting)
Air Quality Equity in U.S. Climate Policy (SIO 90)
Air Quality Equity in U.S. Climate Policy (Stanford ECHO lab)
Air Quality Equity in U.S. Climate Policy (invited, UC Sacramento Center)
- 2022: *The Importance of Precipitation in Climate Impact Models* (AGU Fall Meeting)
Air Quality Equity in American Climate Policy (Workshop on Climate and Energy Decision Making, Carnegie Mellon)
Air Quality Equity in U.S. Climate Policy (Scripps Student Symposium)
- 2021: *Air Quality Equity in American Climate Policy* (AGU Fall meeting)
COVID-10, Air Quality Equity, and US Climate Policy (invited, AGU Fall Meeting)
From Paris to California: co-benefits of emission reduction (invited, AGU GeoHealth Early Career Webinar)
From Paris to California: co-benefits of air pollution reduction (Scripps Earth Month event)
Paris Agreement's ambiguity about aerosols drives uncertain health and climate outcomes (UCSD-Kyushu University Webinar Series on SDGs)
- 2020: *Environmental injustice in California revealed by the COVID-19 economic shutdown* (AGU Fall Meeting)
What the COVID-19 shock has taught us about environmental policy bias in California (AGU Fall Meeting)
The challenge of simulating the sensitivity of the Amazonian cloud microstructure to cloud condensation nuclei number concentrations (SIOC 217A)

Posters

- AGU 2023: **Polonik P.**, Ricke K., Burney J. Physical Climate Influences on Statistical Climate Impact Models
- AGU 2021: Wan, J., Ricke K., Khanna G., Lin M., Lawless V., **Polonik P.**, Kadokura K. *Global Migration Response to Climate Trend and Variability*.
Light, T., McIntosh E., Cooper A., Ferrer E., Lana S., McKie T., **Polonik P.**, Sloan P. *The UCSD Climate Action and Policy Committee: A Blueprint for Graduate Student Climate Action on University Campuses*.
- AGU 2019: **Polonik P.**, Ricke K., Burney J. *Many Roads to Paris: The Uncertain Aerosol Emissions Implied by National Greenhouse Gas Reduction Targets*.
- AGU 2017: Biraud S., Chan S., Dengel S., **Polonik P.**, Hanson C.V., Billesbach P., Torn M.S. *Updates from the AmeriFlux Management Project Tech Team*
- AGU 2016: **Polonik P.**, W. Stephen Chan, Sebastien Biraud, David P. Billesbach, Ivan Bogoev, Benjamin Conrad, Anders Nottrott, George G. Burba, Jiahong Li. *Comparison of Gas Analyzers for Eddy Covariance: Effects of Analyzer Type and Spectral Corrections on Fluxes*.
Chan S., Billesbach D.P, Hanson C.V., Dengel S., **Polonik P.**, Biraud S. *The value of redundant measurements-highlights from AmeriFlux site visits using a portable eddy covariance system*.
- AGU 2015: Chan S., Biraud S., **Polonik P.**, Billesbach D., Hanson C.V., Bogoev I., Conrad B., Alstad K.P., Burba G.G., Li J. *Comparison of gas analyzers for quantifying eddy covariance fluxes – results from an irrigated alfalfa field in Davis, CA*.