

# — Adam Michael Bauer —

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## Education

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### University of Illinois Urbana-Champaign

Urbana, Illinois

Ph. D. in Physics

August 2020 — November 2024 (Expected)

**Doctoral Thesis:** *The Physics, Economics, and Political Economy of Climate Risk*

Committee: Ryan Sriver (Chair), Charles Gammie, Cristian Proistosescu (Advisor), Gernot Wagner (Advisor),  
Kelvin Droegemeier

### University of Arizona

Tucson, Arizona

B.S. in Physics (with honors); B.S. in Mathematics

August 2016 — May 2020

**Honors Thesis:** *On the behavior of null rays in spherically symmetric spacetimes*

## Academic Positions

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### University of Illinois Urbana-Champaign

Urbana, Illinois

National Science Foundation Graduate Research Fellow

August 2022 — Present

Graduate Research Assistant

January 2021 — July 2022

Graduate Teaching Assistant

August 2020 — December 2020

### Columbia Business School

New York, New York

Staff Associate II in the Faculty of Business

September 2022 — December 2022

### University of Arizona

Tucson, Arizona

National Science Foundation Research Experience for Undergraduates Intern

May 2019 — August 2019

NASA Space Grant Research Intern

September 2018 — May 2019

## Consulting

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### The World Bank Group, Climate Change Division

Washington, D.C.

Short-term Consultant

May 2023 — Present

### Tamer Center for Social Enterprise & Columbia Business School

New York, New York

Research Consultant

April 2022 — June 2022

## Teaching

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### University of Illinois Urbana-Champaign

Urbana, Illinois

Guest Lecturer (ATMS 140 — Climate and Global Change)

November 2023

Graduate Teaching Assistant (PHYS 102 — College Physics: E&M and Modern)

January 2021 — July 2022

- Made the *List of Teachers Ranked as Excellent by Their Students*

### University of Arizona

Tucson, Arizona

Undergraduate Teaching Assistant (PHYS 331 — Electricity and Magnetism I)

January 2020 — May 2020

Undergraduate Teaching Assistant (PHYS 103 — Introductory Physics II)

August 2019 — December 2019

## Publications

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(\* implies I directly advised the student.)

### PEER-REVIEWED RESEARCH ARTICLES

**Bauer, A. M.**, C. Proistosescu, G. Wagner. *Carbon Dioxide as a Risky Asset*. *Climatic Change*, 177(72), 2024.

In press:

- [\*New York Times\*](#)
- [\*Jerusalem Post\*](#)
- [\*UIUC Physics Research Highlight\*](#)
- [\*Yale Climate Connections\*](#)
- [\*Green Central Banking\*](#)
- [\*Semafor Net-Zero Newsletter\*](#)

Pascale, M., B. L. Frye, L. Dai, N. Foo, Y. Qin, R. Leimbach, **A. M. Bauer**, et al. *Possible ongoing merger discovered by photometry and spectroscopy in the field of the galaxy cluster G165.7+67.0*. *The Astrophysical Journal*, 932(85), 2022.

**Bauer, A. M.**, A. Cárdenas-Avendaño, C. F. Gammie, N. Yunes. *Spherical accretion in alternative theories of gravity*. *The Astrophysical Journal*, 925(2), 2022.

**Bauer, A.** and P. Carter. *Existence of transonic solutions in the stellar wind problem with viscosity and heat conduction*. *SIAM Journal on Applied Dynamical Systems*, 20(1), 2021.

Frye, B. L., M. Pascale, Y. Qin, A. Zitrin, J. Diego, G. Walth, H. Yan, C. J. Conselice, M. Alpaslan, **A. Bauer**, et al. *PLCK G165.0+67.0: Analysis of a massive lensing cluster in a Hubble Space Telescope census of sub-millimeter giant arcs selected using Planck/Herschel*. *The Astrophysical Journal*, 871(51), 2019.

### WORKING PAPERS, POLICY BRIEFS, COMMENTARY, AND OTHER ACADEMIC WRITINGS

McDonnell, A.\*, **A. M. Bauer**, C. Proistosescu. *To what extent does discounting 'hot' climate models improve the predictive skill of climate model ensembles?* Forthcoming in *Earth's Future*, 2024.

**Bauer, A. M.**, F. McIsaac, S. Hallegatte. *How Delayed Learning about Climate Uncertainty Impacts Decarbonization Investment Strategies*. World Bank Policy Research Working Paper No. 10473, The World Bank, Washington DC, 2024.

**Bauer, A. M.**, D. C. Lafferty, K. Schwarzwald, C. Proistosescu, G. Wagner. *Comments on "Principles for Climate-Related Financial Risk Management for Large Financial Institutions"*. Docket No. OP—1793, The Federal Reserve, 2023.

**Bauer, A. M.**, L. R. Vargas Zeppetello, C. Proistosescu. *Soil Moisture Modulation of Midlatitude Heat Waves*. *Earth ArXiv*, 2023.

**Bauer, A.** and B. Frye. *THELI Reduction Software: A write up for inexperienced data reducers*. Posted to THELI Forums and Cloudynights, 2019.

### POPULAR PRESS

**Bauer, A. M.** and G. Wagner. *Use financial logic to price carbon emissions*. *Green Central Banking*, May 2024.

**Bauer, A. M.** *Merging Physics and Economics for Climate Policy*. University of Illinois Department of Physics Research Highlight, 2023.

## Talks and Presentations

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(\* implies an invited talk.)

### \*Carbon Dioxide as a Risky Asset

Midwestern Student Conference on Atmospheric Research

October 2023

Urbana, Illinois

### Financial Modeling of Climate Risk Supports Stringent Mitigation Action

European Association of Environmental and Resource Economists Summer Meeting

June 2023

Limassol, Cyprus

<b>Financial Modeling of Climate Risk Supports Stringent Mitigation Action</b> Association of Environmental and Resource Economists Summer Meeting	May 2023 Portland, Maine
<b>*Carbon Dioxide as a Risky Asset</b> Center for Social and Environmental Futures	December 2022 Boulder, Colorado
<b>Financial Modeling of Climate Risk Supports Stringent Mitigation Action</b> American Geophysical Union Fall Meeting	December 2022 Chicago, Illinois
<b>The Role of Local Thermodynamics in Midlatitude Heat Waves</b> American Geophysical Union Fall Meeting	December 2022 Chicago, Illinois
<b>*Financial Modeling of Climate Risk Supports Stringent Mitigation Action</b> Columbia University Sustainable Development Seminar	November 2022 New York, New York
<b>*Exploring the Controls on Temperature Extremes in the Midlatitudes</b> UC San Diego Climate Journal Club	May 2022 San Diego, California
<b>Characterization and Analysis of Massive Space Telescopes</b> NASA Arizona Space Grant Symposium	April 2019 Tempe, Arizona
<b>Measuring the Dynamical Masses of Sub-millimeter Selected Gravitational Lenses</b> Steward Observatory Internal Symposium	September 2018 Tucson, Arizona

## Honors, Scholarships, and Achievements

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<b>NSF Graduate Research Fellowship Program</b> National Science Foundation	August 2022
<b>List of Teachers Ranked as Excellent by Their Students</b> University of Illinois Urbana-Champaign Department of Physics	December 2020
<b>The Excellence in Undergraduate Research Award</b> University of Arizona College of Science & University of Arizona Department of Physics	May 2020
<b>Glenn C. Purviance Scholarship</b> University of Arizona Department of Mathematics	August 2019 — May 2020
<b>Grogan Scholarship &amp; Gregson Award</b> University of Arizona Department of Physics	August 2019 — May 2020
<b>Galileo Circle Scholar</b> University of Arizona Department of Astronomy (2018) & Department of Physics (2019)	May 2018 & May 2019
<b>Phi Beta Kappa Society</b> Alpha of Arizona Chapter	September 2018
<b>NASA Space Grant Awardee</b> University of Arizona and NASA Space Grant Consortium	September 2018 — May 2019
<b>Douglass Scholarship &amp; Langadas Scholarship</b> University of Arizona Department of Physics; University of Arizona Department of Astronomy	August 2018 — May 2019
<b>Weaver Research Award</b> University of Arizona Department of Physics	August 2017 — May 2018

## Service and Extra Curricular

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### Journal Referee

- *The Review of Economic Studies*
- *Earth's Future*

### Graduate Peer Mentor

September 2024 — Present

University of Illinois Urbana-Champaign Department of Climate, Meteorology, and Atmospheric Sciences

### ESE Summer Camp for Girls Volunteer

July 2024

University of Illinois Urbana-Champaign

### Undergraduate — Graduate Peer Mentor

September 2022 — May 2024

University of Illinois Urbana-Champaign Department of Climate, Meteorology, and Atmospheric Sciences

### Graduate Peer Mentor

September 2021 — May 2023

University of Illinois Urbana-Champaign Department of Physics

### Grad On-Call

September 2020 — May 2021

University of Illinois Urbana-Champaign Department of Physics

### Undergraduate Peer Mentor

September 2018 — May 2020

University of Arizona Department of Astronomy

### Physics Discovery Project Developer and Team Member

August 2019 — May 2020

University of Arizona Department of Physics

## Technical Strengths and Other Information

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### Coding Languages:

- *Strong:* Python, Mathematica, Jupyter Notebooks, LaTeX
- *Beginner:* Julia

### Human Languages:

- *Native:* English
- *Intermediate:* Italian (B1 Level)