

Kaushal Gianchandani

Affiliation : Department of Earth, Atmospheric, and Planetary Sciences (EAPS), Massachusetts Institute of Technology (MIT)
Email : kaushalg@mit.edu
Web : <https://kaushalgianchandani.github.io/>

RESEARCH INTEREST

(Physical, Paleo- and Exo-) Oceanography, Climate (Dynamics and Data Analysis)

EDUCATION

Hebrew University of Jerusalem Oct 2017 - Jun 2023
Ph.D. in Oceanography Jerusalem, Israel
Thesis: Physical-biogeochemical dynamics of extreme paleoclimate events
Advisors: Prof. Hezi Gildor, Prof. Yosef Ashkenazy (Ben-Gurion University) and Prof. Eli Tziperman (Harvard University)

National Institute of Science Education and Research Aug 2012 - May 2017
Integrated B.Sc. - M.Sc. in Physics Bhubaneswar, Odisha, India
Thesis: Transition to turbulence in subcritical baroclinic flows [[view thesis](#)]
Advisor: Dr. Antoine Venaille (École Normale Supérieure de Lyon)

WORK EXPERIENCE (Since 2019)

Massachusetts Institute of Technology Sep 2023 - present
Postdoctoral Associate Cambridge, MA, USA
Advisor: Prof. John Marshall

Hebrew University of Jerusalem Oct 2020 - Jan 2021
Teaching Assistant Jerusalem, Israel
Course: Mathematical methods in scientific models [[view notes](#)]
Instructor: Prof. Nathan Paldor

PUBLICATIONS

In press:

- **Kaushal Gianchandani**, Itay Halevy, Hezi Gildor, Yosef Ashkenazy, and Eli Tziperman. “Production of neoproterozoic banded iron formations in a partially ice-covered ocean.” In: *Nature Geoscience*.

Published in peer-reviewed journals[†]:

- [1] **Kaushal Gianchandani** and Nathan Paldor. “Ekman pumping on the β -plane”. In: *Physics of Fluids* 36.2 (2024), p. 026617. DOI: [10.1063/5.0194042](https://doi.org/10.1063/5.0194042).
- [2] **Kaushal Gianchandani**, Sagi Maor, Ori Adam, Alexander Farnsworth, Hezi Gildor, Daniel J Lunt, and Nathan Paldor. “Effects of paleogeographic changes and CO₂ variability on northern mid-latitudinal temperature gradients in the Cretaceous”. In: *Nature Communications* 14 (2023), p. 5193. DOI: [10.1038/s41467-023-40905-7](https://doi.org/10.1038/s41467-023-40905-7).
- [3] **Kaushal Gianchandani**, Hezi Gildor, and Nathan Paldor. “On the role of domain aspect ratio in the westward intensification of wind-driven surface ocean circulation”. In: *Ocean Science* 17 (2021), pp. 351–363. DOI: [10.5194/os-17-351-2021](https://doi.org/10.5194/os-17-351-2021).

[†]Please send an email to me for the pdf

- [4] Salvatore Campisi-Pinto, **Kaushal Gianchandani**, and Yosef Ashkenazy. “Statistical tests for the distribution of surface wind and current speeds across the globe”. In: *Renewable Energy* 149 (2020), pp. 861–876. DOI: [10.1016/j.renene.2019.12.041](https://doi.org/10.1016/j.renene.2019.12.041).

SEMINARS

- Atmospheres and Oceans Seminar Jan 2021
Johns Hopkins University, Baltimore, MD, USA

CONFERENCE AND WORKSHOPS (Last 5)

- GFD Days 2022 (Talk) Apr 2022
Ben-Gurion University of the Negev, Sede Boqer, Israel
- Ocean Sciences Meeting 2022 (Talk) Feb - Mar 2022
Session: AI05 Role of ocean-atmosphere dynamics in global climate, Online
- Next Generation Challenges in Energy-Climate Modeling Workshop (Poster) Sep 2021
University of Reading, Reading, UK, Online
- NASA PACE Applications Workshop Sep 2021
National Aeronautics and Space Administration, Online
- Wave Dynamics and Climate Workshop (Talk) Sep 2019
Inter-University Institute for Marine Sciences, Eilat, Israel

SCHOOLS

- International Spring School: Hydrothermal Vents May 2021
European Astrobiology Network Association, Online
- Summer School on Fluid Dynamics of Sustainability and Environment Sep 2018
University of Cambridge, Cambridge, UK

SERVICES

- Member, Colloquium Committee for the Program in Atmospheres, Oceans and Climate (PAOC) at MIT Nov 2023 - May 2024
- Reviewer for *Nature Communications* and *Journal of Climate* 2023
- Member, The Oceanography Society Student Committee Sep 2021 - Aug 2023
- Co-chair, Session AI05[‡] in Ocean Science Meeting (OSM) 2022 Feb - Mar 2022
Participant of the inaugural OSM Session Mentoring Program

MENTORSHIP

- Sagi Maor (B.Sc. student), Hebrew University of Jerusalem Nov 2021 - Oct 2022
– Undergraduate research project in paleo-oceanography

OUTREACH ACTIVITIES

- TOS Panel Discussion for World Oceans Day Jun 2022
Title: [Using Ocean and Environmental Data to Address Socio-Economic Challenges](#)
– Organized and moderated a remote panel discussion with 50+ attendees (students, researchers and industry professionals) from 5 countries. [\[view video\]](#)

[‡]The role of ocean-atmosphere dynamics in global climate

- **Young Data Scientists Quest** Jan - Apr 2022
 - Mentored 30 students of Launch High School, Cedar City, UT for a 10-week data science bootcamp.
 - Designed two data science projects to complement the bootcamp. [view [project 1](#), [project 2](#)]
 - Conducted multiple training sessions on data acquisition, visualization and analysis.
 - One of the projects was awarded the *Best Data Science Application: AI award* by a panel of experts.

AWARDS

- **Registration Grant**, Ocean Sciences Meeting 2022 Feb - Mar 2022
- **Innovation in Science Pursuit for Inspired Research (INSPIRE) Fellowship** 2012 - 17
 Sponsor: Department of Science and Technology, Government of India
Awarded to the top 1% of students in India pursuing an undergraduate degree in basic sciences.
- **Physics Summer Research Fellowship** Jun - Jul 2015
 Sponsor: Institute of Mathematical Sciences, Chennai
Awarded to 15 students selected from applicants across India to pursue an internship in Physics at the institute.

MEMBERSHIPS

- The Oceanography Society Apr 2019 - present
- Israeli Association for Aquatic Sciences Mar 2019 - Aug 2023
- The New York Academy of Science Oct 2020 - Oct 2021

TECHNICAL STRENGTHS

Programming Languages : Python, Fortran, Bash
 General circulation models : MITgcm, ROCKE-3D, NASA GISS ModelE