

Kaushal Gianchandani

Affiliation : Department of Earth, Atmospheric, and Planetary Sciences (EAPS) at Massachusetts Institute of Technology (MIT)
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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

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

École Normale Supérieure de Lyon May - Jul 2016
Summer Intern Lyon, France
Project Title: Transition to turbulence in subcritical baroclinic flows (contd. as Master's thesis)
Advisor: Dr. Antoine Venaille

Institute of Mathematical Sciences Jun - Jul 2015
Summer Research Fellow Chennai, Tamil Nadu, India
Project Title: Binary logic using spatially patterned deaths in chemical oscillators [[view report](#)]
Advisor: Prof. Sitabhra Sinha

Indian Institute of Science Education and Research - Kolkata May - Jul 2014
Summer Intern Kolkata, West Bengal, India
Project Title: Time series analysis of the bouncing ball experiment [[view report](#)]
Advisors: Prof. Prasanta K. Panigrahi and Prof. A.N. Sekar Iyengar

National Institute of Science Education and Research May - Jun 2013
Summer Intern Bhubaneswar, Odisha, India
Project Title: Motion of the Foucault pendulum [[view report](#)]
Advisor: Dr. Joydeep Bhattacharjee

PUBLICATIONS

Published in peer-reviewed journals[†]:

- [1] **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: <https://doi.org/10.1038/s41467-023-40905-7>.
- [2] **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: <https://doi.org/10.5194/os-17-351-2021>.
- [3] 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: <https://doi.org/10.1016/j.renene.2019.12.041>.

In review:

- **Kaushal Gianchandani** and Nathan Paldor. "Ekman pumping on the β -plane"
- **Kaushal Gianchandani**, Itay Halevy, Hezi Gildor, Yosef Ashkenazy, and Eli Tziperman. "Production of neoproterozoic banded iron formations in a partially ice-covered ocean."

SEMINARS

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

CONFERENCE AND WORKSHOPS

- GFD Days 2022 (Talk) Apr 2022
Johns Hopkins University, Baltimore, MD, USA
- 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
- Israeli Association for Aquatic Sciences' 15th Annual Meeting (Talk) Mar 2019
Haifa, Israel
- EPScon 2019 (Poster) Mar 2019
Weizmann Institute of Science, Rehovot, Israel
- GFD Days 2019 (Poster) Jan 2019
Ben-Gurion University of the Negev, Sede Boqer, Israel
- Ice, Oceans and Atmospheres on Earth and Elsewhere May 2018
CNR Headquarters, Rome, Italy
- 10th Conference on Nonlinear Systems and Dynamics (Poster) Dec 2016
Indian Institute of Science Education and Research - Kolkata, Kolkata, India
- Statphys26 Jul 2016
Lyon, France

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

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
- 10th Winter School on Astroparticle Physics Dec 2015
Bose Institute, Darjeeling, India

SERVICES

- Member, Colloquium Committee for Program in Atmospheres, Oceans and Climate (PAOC) at MIT Feb - May 2024
- Reviewer for *Nature Communications* and *Journal of Climate* 2023
- Member, The Oceanography Society Student Committee Sep 2021 - Aug 2023
Served on the Coding Resources Subcommittee
- Co-chair, Session AI05 in Ocean Science Meeting 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 the panel discussion with 50+ attendees (students, researchers and industry professionals) from 5 countries
- [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.
– 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 - present
- The New York Academy of Science Oct 2020 - Oct 2021

TECHNICAL STRENGTHS

Computer Languages : Python, Fortran, Bash

General circulation models : MITgcm, ROCKE-3D, NASA GISS ModelE