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

Published in peer-reviewed journals[†]:

[1] **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* 17 (2024), 298–301. DOI: 10.1038/s41561-024-01406-4.

[2] **Kaushal Gianchandani** and Nathan Paldor. "Ekman pumping on the β-plane". In: *Physics of Fluids* 36 (2024), p. 026617. DOI: 10.1063/5.0194042.

[3] **Kaushal Gianchandani**, Sagi Maor, Ori Adam, Alexander Farnsworth, Hezi Gildor, Daniel J Lunt, and Nathan Paldor. "Effects of paleogeographic changes and CO_2 variability on northern mid-latitudinal temperature gradients in the Cretaceous". In: *Nature Communications* 14 (2023), p. 5193. DOI: 10.1038/s41467-023-40905-7.

[4] **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.

[5] 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.

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

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-Guiron 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 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]

- 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.

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‡The role of ocean-atmosphere dynamics in global climate

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