Dipti Hingmire

Contact Information	4020 Braefoot Rd, Victoria BC, V8X 2B7, Canada	Phone: +1-778-533-4594 E-mail: diptikalyanshetti@gmail.com

Research Interests

- Earth System Modelling
- Dynamical Downscaling
- Climate Dynamics: *Monsoons, Fog*

Current Position

Post-doctoral Fellow February 2022 - present
School of Earth and Ocean Sciences,
University of Victoria,
Victoria BC, Canada

Education

PhD, Atmospheric Sciences 2022
Indian Institute of Tropical Meteorology, Pune, India
Advisor: Dr. Ramesh Vellore
Thesis Title: *Large-scale dynamical controls relevant to wintertime widespread fog over the Indo-Gangetic plains.*

M.Tech, Atmospheric Sciences 2015
Savitribai Phule Pune University,
Pune, India

B.E., Civil Engineering 2010
Walchand College of Engineering, Sangli,
Shivaji University,
Kolhapur, India.

Experience

System Engineer July 2010 to July 2013
Tata Consultancy Services Limited

Journal Publications

1. **Dipti Hingmire**, Haruki Hirawasa, Hansi Singh, Philip J. Rasch, Soo Kyung Kim, Subhashis Hazarika, Peetak Mitra, and Kalai Ramea:
"*South Asian Summer Monsoon Precipitation is Sensitive to Southern Hemisphere Subtropical Radiation Changes.*"
Geophysical Research Letters 51 (11), (2024).
https://doi.org/10.1029/2024GL108499

2. Graham Epstein, Susanna Fuller, **Dipti Hingmire**, Paul Myers, Angelica Peña, Clark Pennelly and Julia Baum:
"*Predictive mapping of organic carbon stocks and accumulation rates in surficial sediments of the Canadian continental margin.*"
Earth System Science Data, 16, 2165–2195 (2024).
https://doi.org/10.5194/essd-16-2165-2024.

3. Samuel Starko, Brian Timmer, Luba Reshitnyk, Matthew Csordas, Jennifer McHenry, Sarah Schroeder, Margot Hessing-Lewis, Maycria Costa , Amanda Zielinski, Rob Zielinski, Sarah Emily Cook, Rob Underhill, Leanna Boyer, Christopher Fretwell, Jennifer Yakimishyn, William A Heath, Christine Gruman, **Dipti Hingmire**, Julia Baum, Christopher Neufeld.
"*Local and regional variation in kelp loss and stability across coastal British Columbia.*"

Marine Ecology Progress Series Vol. 733: 1–26, (2024).
https://doi.org/10.3354/meps14548.

4. Haruki Hirasawa, **Dipti Hingmire**, Hansi Singh, Philip J. Rasch, Peetak Mitra:
"*Effect of regional marine cloud brightening interventions on climate tipping elements.*"
Geophysical Research Letters 50 (20), e2023GL104314, (2023).

5. Hansi Alice Singh, and **Dipti Hingmire**:
"*Regional Precipitation Sensitivity Is Sensitive to Changes in Cross-Equatorial Ocean Heat Transport.*"
Under Review, Authorea Preprints, 2023.

6. Subhashis Hazarika, Haruki Hirasawa, Sookyung Kim, Kalai Ramea, Salva R Cachay, Peetak Mitra, **Dipti Hingmire**, Hansi Singh, Phil J Rasch:
"*HAiVA: Hybrid AI-assisted Visual Analysis Framework to Study the Effects of Cloud Properties on Climate Patterns.*"
arXiv preprint arXiv:2305.07859, 2023

7. Gokul T., Ramesh Vellore, D. C. Ayantika, R. Krishnan, and **Dipti Hingmire**:
"*Sensitivity to PBL Parameterizations on the Marine Layer Cloud Simulations in the Southern Indian Ocean.*"
Meteorology and Atmospheric Physics 134, no. 3 (June 2022): 56.
https://doi.org/10.1007/s00703-022-00889-3.

8. **Dipti Hingmire**, Ramesh Vellore, R. Krishnan, Manmeet Singh, A. Metya, T. Gokul, and D. C. Ayantika:
"*Climate Change Response in Wintertime Widespread Fog Conditions over the Indo-Gangetic Plains.*"
Climate Dynamics 58 (2022): 2745–2766.

9. Rekha Yadav, Manpreet Bhatti, Sushil Kansal, Laxmi Das, Vishakha Gilhotra, Aditi Sugha, **Dipti Hingmire**, Shweta Yadav, Ankit Tandon, and Rajbir Bhatti:
"*Comparison of Ambient Air Pollution Levels of Amritsar during Foggy Conditions with That of Five Major North Indian Cities: Multivariate Analysis and Air Mass Back Trajectories.*"
SN Applied Sciences 2 (2020): 1–11.

10. **Dipti Hingmire**, Ramesh K. Vellore, R. Krishnan, N. V. Ashtikar, Bhupendra B. Singh, Sudhir Sabade, and R. K. Madhura:
"*Widespread Fog over the Indo-Gangetic Plains and Possible Links to Boreal Winter Teleconnections.*"
Climate Dynamics 52 (2019): 5477–5506.

11. Sachin Tiwale, and **Dipti Hingmire**.
"*Scapegoating Climate Change.*"
Economic and Political Weekly 51, no. 23 (2016): 69–70.

Conferences Publications

1. Soo Kyung Kim, Kalai Ramea, Salva Rühling Cachay, Haruki Hirasawa, Subhashis Hazarika, **Dipti Hingmire**, Peetak Mitra, Philip J. Rasch, and Hansi A. Singh:
"*Climate Intervention Analysis Using AI Model Guided by Statistical Physics Principles.*"
CIKM 2023.

2. **Dipti Hingmire**, Hansi Singh, Julia Jeworrek, Ryan Arta, Parker MacCready, Matt Csordas, Jennifer MacHenry, Graham Epstein, Julia Baum:
"*High resolution climate projections and environmental downscaling for Canada's marine environment.*"
Coastal Zone Canada Conference 2023.

3. Salva Rühling Cachay, Peetak Mitra, Haruki Hirasawa, Sookyung Kim, Subhashis Hazarika, **Dipti Hingmire**, Phil Rasch, Hansi Singh, Kalai Ramea:
"*ClimFormer–A Spherical Transformer Model for Long-term Climate Projections*"
Proceedings of the Machine Learning and the Physical Sciences Workshop, NeurIPS, 2022

4. **Dipti Hingmire**, Hansi Alice Singh, Haruki Hirasawa, Phil Rasch, Linda Hedges, Brian Dobbins, Peetak Mitra, Subhashis Hazarika, Soo Kyung Kim, Kalai Ramea:
"*Will correcting cloud radiative biases over the Southern Ocean improve precipitation biases over the Indian subcontinent in CESM2 simulations?*"
AGU Fall Meeting 2022.

5. **Dipti Hingmire**, Hansi Alice Singh, Haruki Hirasawa, Phil Rasch, Linda Hedges, Brian Dobbins, Peetak Mitra, Subhashis Hazarika, Soo Kyung Kim, Kalai Ramea:
"*Will correcting cloud radiative biases over the Southern Ocean improve precipitation biases over the Indian subcontinent in CESM2 simulations?*"
AGU Fall Meeting 2022.

6. **Dipti Hingmire**, Haruki Hirasawa, Hansi Alice Singh, Salva Ruhling Cachay, Soo Kyung Kim, Peetak Mitra, Subhashis Hazarika, Kalai Ramea, Phil Rasch:
"*AI assisted evaluation of ESMs in simulating observed cloud climate interactions.*"
AGU Fall Meeting 2022.

7. Hansi Alice Singh, Haruki Hirasawa, **Dipti Hingmire**, Subhashis Hazarika, Soo Kyung Kim, Salva Ruhling Cachay, Peetak Mitra, Kalai Ramea, Phil Rasch:
"*Marine Cloud Brightening Intervention Optimization using a Hybrid AI Approach.*"
AGU Fall Meeting 2022.

8. Peetak Mitra, **Dipti Hingmire**, Haruki Hirasawa, Salva Ruhling Cachay, Subhashis Hazarika, Soo Kyung Kim, Kalai Ramea, Hansi Alice Singh, Phil Rasch:
"*On incorporating first principles based physical conservation laws into global climate emulators.*"
AGU Fall Meeting 2022.

9. Subhashis Hazarika, Kalai Ramea, Soo Kyung Kim, Peetak Mitra, Salva Ruhling Cachay, Haruki Hirasawa, **Dipti Hingmire**, Hansi Alice Singh, Phil Rasch:
"*Interactive Visual Analytics to Study the Impacts of Cloud Radiative Properties on Climate Patterns.*"
AGU Fall Meeting 2022.

10. Haruki Hirasawa, **Dipti Hingmire**, Hansi Alice Singh, Phil Rasch, Linda Hedges, Brian Dobbins, Peetak Mitra, Subhashis Hazarika, Soo Kyung Kim, Kalai Ramea:
"*Marine Cloud Brightening Forcing and Climate Response in the Community Earth System Model 2.*"
AGU Fall Meeting 2022.

11. Kalai Ramea, Sookyung Kim, Peetak Mitra, Subhashis Hazarika, **Dipti Hingmire**, Haruki Hirasawa, Phil Rasch, Hansi Singh:
"*AiBEDO: A hybrid AI model to capture the effects of cloud properties on global*

circulation and regional climate patterns."
AGU Fall Meeting 2022.

12. Hansi Alice Singh, Kalai Ramea, **Dipti Hingmire**:
"*Machine Learning Methods may Reduce Uncertainty in Earth System Model Projections: A Case Study of Ocean Heat Uptake and AMOC Collapse.*"
AGU Fall Meeting 2022.

13. Kalai Ramea, Sookyung Kim, Peetak Mitra, Subhashis Hazarika, **Dipti Hingmire**, Haruki Hirasawa, Phil Rasch and Hansi Singh:
"*AiBEDO: A Hybrid AI Model to Capture the Effects of Cloud Properties on Global Circulation and Regional Climate Patterns.*"
Climate Informatics 2022.

14. **Dipti Hingmire**, Ramesh Vellore, R.Krishnan:
"*Widespread fog over the Indo-Gangetic-Plains(IGP) and possible links to boreal winter teleconnections.*"
International Conference On Clouds and Precipitation 2021, held online, 2-6 August 2021.

15. **Dipti Hingmire**, Ramesh Vellore, R.Krishnan, S. Sabade, B. Singh and R. K. Madhura:
"*Polar teleconnections associated with wintertime widespread fog over the Indo-Gangetic plains.*"
National Conference on Polar Sciences 2017, held at NCAOR, Goa, 16-17 May 2017.

16. **Dipti Hingmire**, Milind Mujumdar, Sooraj K P, Pascal Terray and R.Krishnan:
"*Evaluation of CMIP5 and CORDEX South-Asia models in simulating North-East Monsoon(NEM) of India.*"
Annual Workshop on Monsoon-2014 and National Symposium on Vagaries of Monsoon, held at IITM, Pune. **Awarded second prize for the best presentation**

Academic Achievements

- Secured All India Rank 6 in UGC-CSIR-NET Examination for *Earth Sciences*, December 2014
- Ranked first among all M.Tech students of Department of Atmospheric and Space Sciences, Savitribai Phule Pune University in 2015.

Skills

- **Languages:** Python (numpy, scipy, xarray, matplotlib, proplot), Fortran, Java
- **Climate data analysis and visualization:** NCAR Command Language (NCL), Climate Data Operator (CDO), NetCDF Operators (NCO)

General Details

Gender	: Female
Languages Known	: Marathi (native), English and Hindi (fluent)
Visas	: Canada (Work permit), USA (B1/B2)
Permanent Address	: A-12/403, Park Infinia, Bhekrai Nagar, Pune, Maharashtra, 412308, India