Hemant Khatri

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Education

2015 – Present **Ph.D., Mathematics, Imperial College London, UK**
Thesis title: *Dynamics of ocean jets over topography*
Advisor: Pavel Berloff

2013 – 2015 **M.Sc., Atmospheric & Oceanic Sciences, Indian Institute of Science (IISc), India**
Thesis title: *Mesoscale turbulence on the ocean surface from satellite altimetry*
Advisor: Jai Sukhatme | CGPA: 7.2/8

2009 – 2013 **B.E., Chemical Engineering, Birla Institute of Technology & Science, India**
CGPA: 8.3/10, *First Class Honours*

Professional Experience

2019 – Present **Modelling Associate (Intern)**, Risk Management Solutions, London, UK
Project: *Impacts of sea level rise on coastal flooding in Japan*

Fellowships and Awards

Oct 2016 **Research grants**, Mathematics for Planet Earth CDT, Imperial College London, UK.
Feb 2016 **President's PhD scholarship**, Imperial College London, UK.
Jan 2014 **Jeremy Grantham fellowship**, Divecha Centre for Climate Change, IISc, India.
Aug 2013 **GATE fellowship**, Ministry of Human Resource Development, India.

Teaching Experience

Fall 2017 **Teaching Assistant –** Mathematical Methods I, Multivariable Calculus
Spring 2017 **Teaching Assistant –** Mathematical Methods II, Numerical Analysis
Fall 2016 **Teaching Assistant –** Mathematical Methods I.
Spring 2015 **Teaching Assistant –** Geophysical Fluid Dynamics

Research Interests

Turbulence in the oceans and atmosphere, impacts of topography on the ocean circulation, heat and tracer transport by eddies.

Publications

- Khatri, H. and Berloff, P. (under review). Tilted, drifting jets over a sloped topography: Effects of vanishing eddy viscosity.
- Khatri, H. and Berloff, P. (2018). Role of eddies in the maintenance of multiple jets embedded in eastward and westward baroclinic shears, *Fluids*.
- Khatri, H. and Berloff, P. (2018). A mechanism for jet drift over topography, *Journal of Fluid Mechanics*.

- Khatri, H., Sukhatme, J., Kumar, A. and Verma, M. K. (2018). Surface ocean enstrophy, kinetic energy fluxes, and spectra from satellite altimetry, *Journal of Geophysical Research: Oceans*.

Conferences

- Khatri H. & Berloff P., Dynamics of ocean jets formed over a sloped topography, *Workshop "Conservation Principles, Data, and Uncertainty in Atmosphere-Ocean Modelling", April 2019, Potsdam, Germany*.
- Khatri H., Sukhatme J., Kumar A. & Verma M. K., Ocean surface turbulence: Is it QG or surface-QG like?, *CliMathNet Conference, Sep 2018, Reading, UK*.
- Khatri H. & Berloff P., Dynamics of ocean jets formed over a sloped topography, *Gordon Ocean Mixing Conference, Jun 2018, Andover, USA*.
- Khatri H., Uchida T. & Balwada D., Ocean surface spectral fluxes of kinetic energy, enstrophy and buoyancy, *Gordon Ocean Mixing Conference, Jun 2018, Andover, USA*.
- Khatri H. & Berloff P., Drifting quasi-zonal jets, *Rotating Fluids Meeting, Sep 2017, University of Oxford, UK*.
- Khatri H., Random to organized motions in the oceans, *Annual conference, Imperial College SIAM chapter, Jul 2017, London, UK*.
- Khatri H. & Berloff P., Effects of zonally varying topography on the dynamics of oceanic jets, *21^{st} conference on atmospheric and oceanic fluid dynamics, Jun 2017, Portland, USA*.
- Khatri H., Sukhatme J., Kumar A. & Verma M. K., Kinetic energy and enstrophy fluxes on the ocean surface, *Meeting: Energy transfers in the atmosphere and oceans, May 2017, Hamburg, Germany*.

Seminars

- **Mar 2019 –** Jet drift over topography and jet-topography interactions, *GFDL, Princeton, USA*.
- **Dec 2017 –** Geophysical jets: formation and existence, *Queen Mary University, London, UK*.

Miscellaneous

Jun 2018 **Participant –** Rossbypalooza: Understanding climate through simple models *Summer school, University of Chicago, USA*.

Aug 2017 **Participant –** Fundamental aspects of turbulent flows in climate dynamics *Summer school, Ecole de Physique des Houches, Les Houches, France.*

Since 2017 **Reviewer –** Journal of Physical Oceanography, Ocean Modelling, Fluids, Journal of Physics: Conference Series (IOP)