

SOUMI CHAKRAVORTY

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PRESENT POSITION

Postdoctoral Research Associate, CIMAS- University of Miami (NOAA/AOML/PHOD)

EDUCATION

Ph.D., Atmospheric Science, University of Pune, India May,2015
Advisor: Dr. C. Gnanaseelan, Scientist 'E', IITM,
Thesis title: “*Understanding the basin scale interannual warming of the Indian Ocean and its regional impacts.*”

RESEARCH EXPERIENCE

- Tropical Ocean and Atmospheric coupled processes.
 - Different types of El Niño and its dynamics.
 - Monsoon Interannual Variability (ENSO monsoon teleconnection).
 - Decadal and long term changes in ocean and atmospheric processes.
 - Circulation changes in atmosphere and ocean under climate change.
 - Oceanic Waves.
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PUBLICATIONS

1. **Chakravorty S**, Chowdary JS, Gnanaseelan C: Spring asymmetric mode in the tropical Indian Ocean: role of El Niño and IOD. (2013) *Climate Dynamics*. 40, 1467–1481, doi:10.1007/s00382-012-1340-1.
 2. **Chakravorty S**, Chowdary JS, Gnanaseelan C: Epochal changes in the seasonal evolution of Tropical Indian Ocean warming associated with El Niño. (2014) *Climate Dynamics*. doi:10.1007/s00382-013-1666-3.
 3. **Chakravorty S**, Gnanaseelan C, Chowdary JS and Jing-Jia Luo: Relative role of El Niño and IOD forcing on the southern tropical Indian Ocean Rossby waves. (2014) *Journal of Geophysical Research*. 119, 5105–5122, doi: 10.1002/2013JC009713.
 4. **Chakravorty S**, Gnanaseelan C and Pillai PA: Combined influence of remote and local SST forcing on Indian Summer Monsoon Rainfall variability. (2016) *Climate Dynamics*. 47, 2817-2831, doi:10.1007/s00382-016-2999-5.
 5. Chowdary JS, Gnanaseelan C, **Chakravorty S**: Impact of Northwest Pacific anticyclone on the Indian summer monsoon region. (2013) *Theoretical and Applied Climatology*. 113, 329–336, doi.org/10.1007/s00704-012-0785-9.
 6. B.N. Goswami, S.A. Rao, D Sengupta, and **S Chakravorty**: Monsoons to Mixing in the Bay of Bengal: Multi-Scale Air-Sea Interactions and Monsoon Predictability. (2016) *Oceanography*. 29, 2, doi.org/10.5670/oceanog.2016.35
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7. **Chakravorty S** and Gnanaseelan C: Revisiting the recharge and discharge processes for different flavors of El Niño. Submitted JGR.
8. Chakravorty S, Gnanaseelan C and Perez R.C: The Mechanism Driving the Onset of Warm Water discharge Prior to an El Niño. To be Submitted.
9. Chakravorty S, Rahul S and Gnanaseelan C: Drying trend of Indian summer monsoon, potential role of Indian Ocean. Under preparation.
10. Chakravorty S and B.N. Goswami: Air-sea interaction involving the Indian Summer Monsoon and Indo-Pacific SST on a Multi-decadal time scale. To be Submitted.

OTHER PUBLICATIONS:

1. B.N. Goswami and S Chakravorty: Dynamics of the Indian Monsoon Climate. (2016) Oxford Research Encyclopedia, Dynamics of Climate Systems. DOI: 10.1093/acrefore/9780190228620.013.613

PROCEEDING

1. Soumi Chakravorty, C. Gnanaseelan, J.S. Chowdary: Spring asymmetric mode in the tropical Indian Ocean: role of El Niño and IOD. Pan Ocean Remote Sensing Conference (PORSEC-2012). 05-09 Nov 2012 Kochi, Indian.
2. Soumi Chakravorty, C. Gnanaseelan, J.S. Chowdary and Jing-Jia Luo: Role of El Niño and IOD forcing on the southern tropical Indian Ocean Rossby waves. (2013) National Conference of Ocean Society (OSICON-13) on Role of Oceans in Earth System, organized by Ocean Society of Indian and IITM. 26-28 Nov 2013 IITM Pune, Indian.

CONFERENCE PRESENTATIONS and TALKS

1. Soumi Chakravorty, C. Gnanaseelan, J.S. Chowdary (2011): The Impact of the Remote and Local SST forcing to Indian Summer Monsoon Rainfall Variability. Workshop on Monsoon Variability organized by IISC, Bangalore during 17-19 August 2011.
2. Soumi Chakravorty, C. Gnanaseelan, J.S. Chowdary (2012): The Impact of the Remote and Local SST forcing to Indian Summer Monsoon Rainfall Variability. Conference on 'Opportunities and Challenges in Monsoon Prediction in a Changing Climate' (OCHAMP-2012), 21-25 February 2012, Indian Institute of Tropical Meteorology, Pune.
3. Soumi Chakravorty, C. Gnanaseelan, J.S. Chowdary (2013): Epochal changes in El Niño induced tropical Indian Ocean warming and their regional impact. 'Southwest Monsoon-2012' workshop, Indian Meteorological Society, Pune Chapter. Feb 2013, IITM, Pune, Indian.
4. Soumi Chakravorty, C. Gnanaseelan, J.S. Chowdary (2013): Role of El Niño and IOD forcing on the southern tropical Indian Ocean Rossby waves. National Conference of Ocean Society **OSICON-13** on Role of Oceans in Earth System, 26-28 Nov 2013, IITM, Pune, Indian.
5. Soumi Chakravorty, C. Gnanaseelan (2014): The Mechanism of onset of discharge related to El Niño. World Weather Open Science Conference (WWOSC-2014), Montreal, Quebec, Canada from 16-21 August, 2014.
6. Soumi Chakravorty, C. Gnanaseelan (2015): The Mechanism of onset of Warm Water discharge related to El Niño. ENSO Workshop-ENSO Extremes and Diversity: Dynamics, Teleconnection, and Impacts, 4-6th February 2015, Sydney, NSW, Australia.
7. Soumi Chakravorty and B.N. Goswami: Air-sea interaction involving the Indian Summer

Monsoon and Indo-Pacific SST on a Multi-decadal time scale. ICTP Workshop: Teleconnections in the Present and Future Climate, 24-28 Oct 2016, Trieste, Italy.

8. Soumi Chakravorty: The Mechanism of onset of Warm Water discharge related to El Niño. Cooperative Institute for Marine and Atmospheric Studies (CIMAS), Miami, USA.
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HOUNAR and AWARD

- Research Associate CIMAS-UM, NOAA/AOML.
- ICTP Junior Associate, 2017.
- DST Inspire Faculty Award, 2015.
- IITM Best Student Paper Award (2013) for the paper “Spring Asymmetric Mode in the Tropical Indian Ocean: Role of El Niño and IOD”.
- Best Student Paper Awards in OCEAN SOCIETY OF INDIA (OSICON) 2013 for Oral presentation.
- 17th rank in Joint CSIR-UGC Test in the subject EARTH, ATMOSPHERIC, OCEAN & PLANETARY SCIENCES (held on June 2009). Shortlisted for Shyama Prasad Mukherjee fellowship interview.

RECOGNITIONS

1. Selection for participation in the IITM-ICTP Targeted Training Activity (TTA) on "Intraseasonal Monsoon Predictability and Prediction" IITM, Jan14-25, 2013.
 2. Selection for participation in the IITM-ICTP Targeted Training Activity (TTA) on "Intraseasonal Monsoon Predictability and Prediction" IITM, Feb 9-20, 2015.
 3. Selection and travel fellowship for participation in “World Weather Open Science Conference” (WWOSC-2014), Montreal, Quebec, **Canada** from 16-21 August, 2014.
 4. Selection and travel fellowship for participation in ENSO Workshop - ENSO Extremes and Diversity: Dynamics, Teleconnection, and Impacts, 4-6th February 2015, Sydney, NSW, **Australia**.
 5. Selection of participate in the Visiting Scientist Program at the University of Miami’s Cooperative Institute for Marine and Atmospheric Studies (CIMAS), 11-13th April 2017, Miami, **USA**.
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EMPLOYMENT DETAILS

Junior Research Fellow : November 2008- December 2009

CSIR-Junior Research Fellow: January 2010- December 2011

Senior Research Fellow : January 2012- January 2015

Research Associate : February 2015- November 2015

Inspire Faculty : December 2015- present

Postdoctoral Research Associate : August 2017-present

Research Highlights:

1. Quantifying the relative contribution of atmospheric fluxes and oceanic processes in the persistent interannual warming of tropical Indian Ocean related to ENSO and IOD through heat budget analysis.
 2. Study the processes responsible for the temporal and spatial shift in the warming pattern in recent time.
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3. Found evident that spring asymmetric mode in the tropical Indian Ocean is more prominent when El Niño is co-occurred with IOD.
4. The impact of Indian Ocean warming on Indian Summer Monsoon and changing ENSO-monsoon relation.
5. Study the El Niño related subsurface discharge process.

Courses Completed

- Physical and Dynamic Meteorology
- Numerical Weather Prediction
- General Circulation of Ocean and Atmosphere
- Mathematics
- Statistical Methods and Data Analysis

Modeling experience

1. **Modular Ocean Model (MOM):** run MOM5 and conduct sensitivity experiment for climate study.
2. **Parallel Ocean Program (POP):** run POP2 and conduct sensitivity experiment for climate study.
3. **Community Earth System Model (CESM):** Run, design and conduct sensitivity experiment to study El Nino dynamics and its prediction.

Technical Skills

- Handling large dataset (CMIP5, CMIP3).
- Programming language: Fortran 90/95, C, ncl
- Experienced in processing NetCDF, HDF, binary and ascii data for my thesis.
- Knowledge in shell scripting in Unix.
- Knowledge of softwares: GrADS, Ferret, Origin, Microsoft Office.

ASSISTING STUDENTS

Assisted post-graduate student Ms. Aarti Bandgar (M. Tech student of University of Pune) and G. Srinivas (M. Tech student of Andhra University) in their project work.

Workshop Attended:

1. Selected and actively participated in the Summer School on "Dynamics of the North Indian Ocean" conducted by National Institute of Oceanography, Goa during June-July 2010 where renowned scientist Dr. Julian P. McCreary, International Pacific Research Centre gave lecture series on wind-forced, large-scale circulation of the North Indian Ocean and hands on training on 'linear continuously stratified (LCS) model'.
2. Actively participate in the IITM-ICTP Targeted Training Activity (TTA) on "Intraseasonal Monsoon Predictability and Prediction" IITM, Jan14-25, 2013.
3. Actively participate in the IITM-ICTP Targeted Training Activity (TTA) on "Modelling and Prediction of Asian Monsoons: Improving Physical Processes" IITM, Feb 9-20, 2015.