

Nuncio Murukesh

National Centre for Antarctic and Ocean Research,

Head Land Sada,
Vasco da Gama, Goa, India-403804.

Phone(office): (0091) 832-2525679.

Phone(Cellular): (0091) 9890357423.

Fax: (0091) 832-2520877

Email: nuncio@ncaor.gov.in

1.0 Personal

Born on November 29, 1975.

Indian Citizen.

2.0 Research Interests

Polar climate variability, Polar-Tropical climate links, Hydrological cycles, Mesoscale eddies and its impact on ocean chemistry and biology

3.0 Education

B.Sc. Mathematics, 1996, Mahatma Gandhi University, Kerala, India.

M.Sc.(2nd rank) Oceanography, 1999, Cochin University of Science and Technology, Kerala, India.

Thesis-A study on the influence of anomalous conditions in the equatorial Pacific on Indian rainfall with special reference to the rainfall of Kerala state during the years 1997-98.

Ph.D. Marine Science, 2008, Goa University, Goa, India.

Thesis- Role of eddies in the Bay of Bengal circulation and hydrography and in the distribution of nutrients and chlorophyll.

4.0 Employment

Project staff at National Institute of Oceanography, Regional Centre-Kochi, 2000 January-2002 June.

To study the environmental characteristics of the Indian EEZ using ship-board measurements.

Research student at National Institute of Oceanography, Goa, India, 2002 June-2007 June.

Enrolled for Ph.D to study mesoscale eddies in the Bay of Bengal using theories and ship-board and satellite measurements.

Research Scientist at National Centre for Antarctic and Ocean Research, 2008 January-2011 December.

Investigating the southern hemisphere sea-ice variability and its links to the tropics.

Scientist'B at National Centre for Antarctic and Ocean Research, 2011 - 2014 December

Investigating links between tropical SST and southern high latitude climate.

Scientist'C at National Centre for Antarctic and Ocean Research, 2015 January Onwards

Scientist in Charge of Atmospheric -Ocean Interaction Group responsible for - maintaining the Atmospheric Observatory of NCAOR in Ny Alesund Arctic

*Ocean Atmosphere Sea-ice modelling Studies
Investigating links between poles and the tropics.*

5.0 Awards

Scientific committee on Antarctic Research (SCAR) fellowship to carry out research on high latitude-tropical teleconnections at Lamont Doherty Earth Observatory, Columbia University. Under this project the relationship of Indian Ocean Dipole (IOD) with the sea-ice in the Antarctica was studied.

6.0 Publications

6.1 Journal Articles

Under review

Influence of Large Scale Atmospheric Circulation Variability on temperature and precipitation in Ny, Alesund, Svalbard, *M. Nuncio, Sourav Chatterjee, K. Satheesan, Sheeba Chenoli, Climate Dynamics*

Antarctic temperature : Changing relationship with the tropics, *M. Nuncio, Sourav Chatterjee, M. Ravichandran, Atmospheric Research*

Upper layer diapycnal mixing and nutrient flux in the subtropical frontal region of the Indian sector of Southern Ocean, *Anilkumar N, Melena A Soares, M. Nuncio, Ravidas Naik, Sarat Tripathy, Jenson George, Journal of Marine Systems*

Published

ENSO related SST anomalies and relation with surface heatfluxes over South Pacific and Atlantic, *Sourav Chatterjee, M. Nuncio, Satheesan. K*, *Climate Dynamics*

Does Indian Ocean Dipole influence Antarctic Sea-ice?, 2015, *M. Nuncio & X. Yuan, Journal of Climate, 28(7), 2682-2690*

Phytoplankton community structure at the juncture of the Agulhas return front and subtropical front in the Indian ocean sector of southern ocean: Bottom-up and top-down control, 2014, *Ravidas Krishna Naik, Jenson V George, Melena A Soares, Asha Devi, Anilkumar N, Rajdeep Roy, P.V. Bhaskar, Nuncio Murukesh, C.T. Achuthankutty, Deep Sea Research Part II*

Role of eddies in southward transport of watermasses in the Southern Subtropical front, 2014, *Racheal Chacko, M. Nuncio, Jenson V. George, and N. Anilkumar, Current Science.*

Antarctic Precipitation and Indian Ocean Dipole : Possible links, 2013, *M. Nuncio & K. Satheesan, Climate Dynamics, 43, 7-8, 1965 - 1972*

Role of physical processes on the chlorophyll distribution in the Western Tropical Indian Ocean, 2012, *Jenson V. George, M. Nuncio, Racheal Chacko, N. Anilkumar, Sharon B. Noronha, Shramik Patil, Sini Pavitrana, Denny P. Alappattu, K.P. Krishnan, C.T. Achuthankutty, Journal of Marine Systems.*
<http://dx.doi.org/10.1016/j.jmarsys.2011.10.002>

Life cycle of eddies and their implications along the western boundary of the Bay of Bengal, 2011, *M. Nuncio & S. Prasanna Kumar, Journal of Marine Systems.* <http://dx.doi.org/10.1016/j.jmarsys.2011.10.002>

Role of Westerlies and Thermohaline Characteristics on Sea-Ice Extent in the Indian Ocean Sector of Antarctica, 2011, M.Nuncio & Alvarinho J Luis, *Journal of Geological Society of India*, 78, 211-216.

Topographic meandering of Antarctic circumpolar current and Antarctic circumpolar wave in the ice-ocean-atmosphere system, 2011, M.Nuncio, Alvarinho J Luis & Xiaojun Yuan, *Geophysical Research Letters*, 38, L13708, doi:10.1029/2011GL046898. <http://www.agu.org/journals/gl/g11113/2011GL046898/>

Seasonal cycle of the physical forcing and biological response in the Bay of Bengal, 2010, S. Prasanna Kumar, M. Nuncio, Jayu Narvekar, N. Ramaiah, S. Sardesai, M. Gauns, Veronica Fernandes, J.T.Paul, R. Jyothibabu, K.A.Jayaraj, *Indian Journal of marine sciences*, 39, 388-405. <http://nopr.niscair.res.in/handle/123456789/10675>

Is the biological productivity in the Bay of Bengal light limited?, 2010, S. Prasanna Kumar, Jayu Narvekar, M. Nuncio, N. Ramaiah, S. Sardesai, Mangesh Gauns, V. Fernandes, Jane Paul, *Current Science*, 98(10), 1331-1339. http://www.currentscience.ac.in/Downloads/download_pdf.php?titleid=id_098_10_1331_1339_0

What Drives the Biological Productivity of the Northern Indian Ocean? 2009, S. Prasanna Kumar, Jayu Narvekar, M. Nuncio, M. Gauns, and S. Sardesai, *American Geophysical Union, Monographs*.

Eddy-mediated biological productivity in the Bay of Bengal during fall and spring intermonsoons, 2007, S.Prasanna Kumar, M.Nuncio N.Ramaiah, S. Sarsesai, Jayu Narvekar, Veronica Fernandes, Jane.T.Paul, *Deep-Sea Research I*, 54, 1619-1640, 2007. <http://dx.doi.org/10.1016/j.dsr.2007.06.002>

Are eddies nature's trigger to enhance primary productivity in the Bay of Bengal?, 2004, S. Prasanna Kumar, M. Nuncio, Jayu Narvekar, Ajoy Kumar, S. Sardesai, S. N. de. Souza, Mangesh Gauns, N. Ramaiah and M. Madhupratap, *Geophysical Research Letters*. <http://www.agu.org/journals/gl/g10407/2003GL019274>

Sea level and currents in the upper reaches of the Cochin estuarine system, 2004 K. Srinivas, C. Revichandran, T. J. Thottam, P.A. Maheswaran, T. T. M. Ashraf and Murukesh Nuncio, *Indian Journal of Marine Science*, 33, 155-163.

Intense blooms of *Trichodesmium erythraeum* (Cyanophyta) in the open waters along east coast of India, 2003, R. Jyothibabu, N.V. Madhu, Murukesh Nuncio, P.C. Haridas, K. K. C. Nair and P. Venugopal, *Indian Journal of Marine Science*, 32, 165-167.

Currents in the Cochin estuarine system (southwest coast of India) during March 2000, 2003 K. Srinivas, C. Revichandran, T. J. Thottam, P.A. Maheswaran, T. T. M. Ashraf and Murukesh Nuncio, *Indian Journal of Marine Science*, 32, 123-132.

Propagation of tides in the Cochin estuarine system, South west coast of India, 2003, K. Srinivas, C. Revichandran, T. J. Thottam, P.A. Maheswaran, T. T. M. Ashraf and Murukesh Nuncio, *Indian Journal of Marine Science*, 32, 14-24.

6.2 Recent Proceedings

"What controls recent temperature trend in Ny Alesund" *Svalbard Science Forum conference, November 2017*

"Influence of ENSO, ENSO Modoki and the Indian Ocean Dipole on Southern high latitude climate" *SCAR OSC, July 2016*

" High frequency variability of the subtropical front" *PORSEC 2012*

“Teleconnections from tropics- Does IOD have a role in sea-ice distribution of Antarctica?” SCAR OSC-July,2012

“ Does Ocean Topography Influence the Antarctic Circumpolar Wave?” AMS meeting on Polar Meteorology and Oceanography, Boston, 2-5 May, 2011

“Role of Westerlies and Thermohaline Structure on Sea-ice in Antarctica” SCAR conference at OSLO, Norway, June 2010.

“Trends in Antarctic Sea-ice, Role of ocean”. at National conference on Climate change,at Goa, India, 22-23 October, 2009.

7.0 Out Reach and other activities

Participated in the *Fifth National science Expo(20-25 January 2011)* conducted by Nehru Science Centre, Mumbai.

Participated in the program *Super Cyclones* telecasted on National Geographic channel.

Actively participated in institutional outreach activities

Actively participated in organising seminars and symposiums by the institute.

8.0 Expertise

Climate data analysis and interpretation.

Observational Physical Oceanography.

Numerical Programming/modelling.

Employing satellite data for insitu sampling and studies.

9.0 Achievements

Actively involved in setting up of atmospheric science lab at Gruebadet, NyAlesund

Actively participated in planning and execution of 2011-12 Southern ocean expedition

Contributed to the various mechanisms governing Antarctic sea-ice/Precipitation variability that are originating in the tropics and propagating to the southern high latitudes.

Contributed to the existing knowledge on the mechanisms of nutrient chlorophyll and primary productivity distribution in the Bay of Bengal by evaluating the role of eddies vs the seasonal forcing.

Contributed to the mechanisms of propagation of Antarctic circumpolar wave (ACW).

Contributed in disseminating the knowledge gained, by participating in outreach activities.

Contributed in the discussions of Need Aspect Committee as member secretary.

Current activities include planning of Atmospheric /Oceanic observations and numerical modelling to understand hydrological cycle in the polar regions

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