

References

- Akhil, V.P., Durand, F., Lengaigne, M., Vialard, J., Keerthi, M.G., Gopalakrishna, V.V., Deltel, C., Papa, F. and de Boyer Montégut, C., 2014. A modeling study of the processes of surface salinity seasonal cycle in the Bay of Bengal. *Journal of Geophysical Research: Oceans*, 119(6), pp.3926-3947.
- Angel M.V, M.A. Baars., R.T. Barber., F.P. Chavez., M. Kastner, M. Leinen, J. R. E. Lutjeharms, G. Reverdin, Shimmiel, G.B., 1995. Group report: how do open ocean upwelling systems operate as integrated physical, chemical, and biological systems and influence the geological record. In: Summerhayes C.P., Emeis K-C, Angel M. V., Smith R.L., Zeitschel B. (eds) *Upwelling in the ocean: modern processes and ancient records*. Wiley, Chichester, pp.193–219.
- Antonov, J.I., Levitus, S. and Boyer, T.P., 2005. Thermosteric sea level rise, 1955–2003. *Geophysical Research Letters*, 32(12), doi:10.1029/2005GL023112.
- Banse, K. and English, D.C., 2000. Geographical differences in seasonality of CZCS-derived phytoplankton pigment in the Arabian Sea for 1978–1986. *Deep Sea Research Part II: Topical Studies in Oceanography*, 47(7), pp.1623-1677.
- Barnes, R.A., Clark, D.K., Esaias, W.E., Fargion, G.S., Feldman, G.C. and McClain, C.R., 2003. Development of a consistent multi-sensor global ocean colour time series. *International Journal of Remote Sensing*, 24(20), pp.4047-4064.
- Bauer, S., Hitchcock, G.L. and Olson, D.B., 1991. Influence of monsoonally-forced Ekman dynamics upon surface layer depth and plankton biomass distribution in the Arabian Sea. *Deep Sea Research Part A. Oceanographic Research Papers*, 38(5), pp.531-553.
- Baumgartner, A. and Reichel, E., 1975. *The world water balance; mean annual global, continental and and maritime precipitation, evaporation and run-off* (No. 628.1 B3). 179 pp., Elsevier Sci., New York
- Behrenfeld, M.J. and Falkowski, P.G., 1997. Photosynthetic rates derived from satellite-based chlorophyll concentration. *Limnology and Oceanography*, 42(1), pp.1-20.
- Behrenfeld, M.J., Randerson, J.T., McClain, C.R., Feldman, G.C., Los, S.O., Tucker, C.J., Falkowski, P.G., Field, C.B., Frouin, R., Esaias, W.E. and Kolber, D.D.,

2001. Biospheric primary production during an ENSO transition. *Science*, 291(5513), pp.2594-2597.
- Benshila, R., Durand, F., Masson, S., Bourdallé-Badie, R., de Boyer Montégut, C., Papa, F. and Madec, G., 2014. The upper Bay of Bengal salinity structure in a high-resolution model. *Ocean Modelling*, 74, pp.36-52, <http://dx.doi.org/10.1016/j.ocemod.2013.12.001>.
- Bhat, G.S., Vecchi, G.A. and Gadgil, S., 2004. Sea Surface Temperature of the Bay of Bengal Derived from the TRMM Microwave Imager*,+. *Journal of Atmospheric and Oceanic Technology*, 21(8), pp.1283-1290.
- Black, P.G., 1983, Ocean temperature change induced by tropical cyclones. Ph. D. Dissertation, *Pennsylvania State University*, University Park, 278 pp.
- Blondeau, D., Tilstone, G.H., Vicente, V.M. And Moore, G.F., 2004, Comparison of biophysical marine products from SeaWIFS, MODIS and a bio-optical model with in situ measurements from Northern European waters. *Journal of Optics A: Pure and Applied Optics*, 6, pp. 875–889.
- Boyer, T.P., Conkright, M.E., Antonov, J.I., Baranova, O.K., Garcia, H.E., Gelfeld, R.J., Locarnini, R.A., Murphy, P., O'Brien, T.D., Smolyar, I. and Stephens, C., 2002. *World Ocean Database 2001*. Volume 2, Temporal distribution of bathythermograph profiles. NOAA Atlas NESDIS 43, 119 pp., CD-ROM, U.S. Government Printing Office, Washington, D.C.
- Boyer, T.P., Levitus, S., Antonov, J.I., Locarnini, R.A. and Garcia, H.E., 2005. Linear trends in salinity for the World Ocean, 1955–1998. *Geophysical Research Letters*, 32(1), doi:10.1029/2004GL021791.
- Brown, O. B., Evans, R.H., Minnett, P.J., Kearns, E.J., and Kilpatrick, K., 2002. Sea surface temperature measured by the MODerate resolution Imaging Spectroradiometer (MODIS). *NASA Earth Observing System Investigator Working Group Meeting*, Ellicott City, MD.
- Bukata, R.P., 2005. Satellite monitoring of inland and coastal water quality: retrospection, introspection, future directions. *CRC Press*.
- Campbell, J., Antoine, D., Armstrong, R., Arrigo, K., Balch, W., Barber, R., Behrenfeld, M., Bidigare, R., Bishop, J., Carr, M.E. and Esaias, W., 2002. Comparison of algorithms for estimating ocean primary production from surface

- chlorophyll, temperature, and irradiance. *Global Biogeochemical Cycles*, 16(3), 9–15.
- Carder, K.L., Chen, F.R., Lee, Z.P., Hawes, S.K. and Kamykowski, D., 1999. Semi-analytic Moderate-Resolution Imaging Spectrometer algorithms for chlorophyll a and absorption with bio-optical domains based on nitrate-depletion temperatures. *Journal of Geophysical Research-Oceans*, 104(C3), pp.5403-5421.
- Chang, J., Chung, C.C. and Gong, G.C., 1996. Influences of cyclones on chlorophyll a concentration and Synechococcus abundance in a subtropical western Pacific coastal ecosystem. *Marine Ecology Progress Series*, 140, pp.199-205.
- Chelton, D.B., 1982. Large-scale response of the California Current to forcing by the wind stress curl. *Calif. Coop. Oceanic Fish. Invest. Rep*, 23, pp.130-148.
- Conway, Eric D., and Maryland Space Grant Consortium (1997), An Introduction to Satellite Image Interpretation, *Baltimore MD: The Johns Hopkins University Press*.
- Cressman, G.P., 1959. An operational objective analysis system. *Monthly Weather Review*, 87(10), pp.367-374.
- Crisp, D.J., 1975. Secondary productivity in the sea. *Productivity of world ecosystems, National Academy of Sciences, Washington, D. C.*, pp.71-89.
- Dey, S. and Singh, R.P., 2003. Comparison of chlorophyll distributions in the northeastern Arabian Sea and southern Bay of Bengal using IRS-P4 Ocean Color Monitor data. *Remote Sensing of Environment*, 85(4), pp.424-428.
- Dube, S.K., Rao, A.D., Sinha, P.C., Murty, T.S. and Bahulayan, N., 1997. Storm surge in the Bay of Bengal and Arabian Sea: the problem and its prediction.
- Dwivedi, R.M., Singha, S.K., Ramana, M., Nayaka, S.R., Parabb, S. and Matondkarb, P., 2004, July. Observation of biological manifestation of physical forces with synergistic use of IRS P4 OCM & MSMR. In *XXth ISPRS congress*, 12-23 July 2004 Istanbul, Turkey, Commission 7.
- Ehret, L.L. and O'Brien, J.J., 1989. Scales of North Atlantic wind stress curl determined from the comprehensive ocean-atmosphere data set. *Journal of Geophysical Research*, 94, pp.831-841, doi:10.1029/JC094iC01p00831.

- Eigenheer, A. and Quadfasel, D., 2000. Seasonal variability of the Bay of Bengal circulation inferred from TOPEX/Poseidon altimetry. *Journal of Geophysical Research: Oceans*, 105(C2), pp.3243-3252.
- Ekman, V.W., 1905. On the influence of the earth's rotation on ocean currents. *Arkiv for Matematik, Astronomi och Fysik* 2, pp.1-53.
- Emanuel, K.A., 1999. Thermodynamic control of hurricane intensity. *Nature*, 401(6754), pp.665-669.
- Emery, K.O. and Aubrey, D.G., 1989. Tide gauges of India. *Journal of Coastal Research*, pp.489-501.
- Faghmous, J.H., Frenger, I., Yao, Y., Warmka, R., Lindell, A. and Kumar, V., 2015. A daily global mesoscale ocean eddy dataset from satellite altimetry. *Scientific data*, 2.
- Falkowski, P.G., Ziemann, D., Kolber, Z. and Bienfang, P.K., 1991. Role of eddy pumping in enhancing primary production in the ocean. *Nature*, 352, 55–58.
- Falkowski, P.G. and Raven, J.A., 1997. Photosynthesis in continuous light. *Aquatic Photosynthesis. Blackwell Science, Malden, Massachusetts*, pp.193-227.
- Gadgil, S., Joshi, N.V. and Joseph, P.V., 1984. Ocean-atmosphere coupling over monsoon regions. *Nature*, 312(5990), pp.141-143.
- Girishkumar, M.S., Ravichandran, M., McPhaden, M.J. and Rao, R.R., 2011. Intraseasonal variability in barrier layer thickness in the south central Bay of Bengal. *Journal of Geophysical Research. Oceans*, 116(3).
- Girishkumar, M.S., Ravichandran, M. and Han, W., 2013. Observed intraseasonal thermocline variability in the Bay of Bengal. *Journal of Geophysical Research: Oceans*, 118(7), pp.3336-3349.
- Gomes, H.R., Goes, J.I. and Saino, T., 2000. Influence of physical processes and freshwater discharge on the seasonality of phytoplankton regime in the Bay of Bengal. *Continental Shelf Research*, 20(3), pp.313-330.
- Gregg, W.W., 2001. Tracking the SeaWiFS record with a coupled physical/biogeochemical/radiative model of the global oceans. *Deep Sea Research Part II: Topical Studies in Oceanography*, 49(1), pp.81-105.

- Gregg, W.W., Conkright, M.E., Ginoux, P., O'Reilly, J.E. and Casey, N.W., 2003a. Ocean primary production and climate: Global decadal changes. *Geophysical Research Letters*, 30(15).
- Gregg, W.W., Ginoux, P., Schopf, P.S. and Casey, N.W., 2003b. Phytoplankton and iron: validation of a global three-dimensional ocean biogeochemical model. *Deep Sea Research Part II: Topical Studies in Oceanography*, 50(22), pp.3143-3169.
- Guo, R., 2006. Territorial disputes and resource management: a global handbook. *Nova Publishers*.
- Halpern, D., Freilich, M.H. and Weller, R.A., 1998. Arabian sea surface winds and ocean transports determined from ERS 1 scatterometer. *Journal of Geophysical Research: Oceans*, 103(C4), pp.7799-7805.
- Halpern, D., Woiceshyn, P.M., Zlotnicki, V., Brown, O.B., Feldman, G.C., Freilich, M.H., Wentz, F.J. and Gentemann, C., 2001. An Atlas of Monthly Mean Distributions of SSMI Surface Wind Speed, AVHRR Sea Surface Temperature, TMI Sea Surface Temperature, AMI Surface Wind Velocity, SeaWiFS Chlorophyll-a, and TOPEX/POSEIDON Sea Surface Topography during 1999. *NASA Jet Propulsion Laboratory, California Institute of Technology*, Publication 01-01, 102 pp.
- Han, W. and McCreary, J.P., 2001. Modeling salinity distributions in the Indian Ocean. *Journal of Geophysical Research: Oceans*, 106(C1), pp.859-877.
- Han, W. and Webster, P.J., 2002. Forcing mechanisms of sea level interannual variability in the Bay of Bengal. *Journal of Physical Oceanography*, 32(1), pp.216-239.
- Hannachi, A., Jolliffe, I.T. and Stephenson, D.B., 2007. Empirical orthogonal functions and related techniques in atmospheric science: A review. *International Journal of Climatology*, 27(9), pp.1119-1152, doi:10.1002/joc.1499.
- Hantel, M., 1970. Monthly charts of surface wind stress curl over the Indian Ocean. *Monthly Weather Review*, 98(7-12), p.765.
- Harrison, D.E. and Vecchi, G.A., 2001. El Niño and La Niña—Equatorial Pacific thermocline depth and sea surface temperature anomalies, 1986–98. *Geophysical Research Letters*, 28(6), pp.1051-1054.

- Hastenrath, S and Lamb, P.J., 1979. Climatic Atlas of the Indian Ocean. *University of Wisconsin Press, Madison, Wisconsin*, 97 p.
- Hidaka, K., 1958. Computation of the wind stresses over the oceans. *Rec. Oceanogr. Works Japan*, 4(2), pp.77-123.
- Howard, K.L. and Yoder, J.A., 1997, December. Contribution of the subtropical oceans to global primary production. In *COSPAR Colloquia Series* (Vol. 8, pp. 157-167). Pergamon.
- IOCCG, 1999. Status and Plans for Satellite Ocean-Colour Missions: Considerations for Complementary Missions. Yoder, J. A. (ed.), *Reports of the International Ocean-Colour Coordinating Group*, No. 2, IOCCG, Dartmouth, Canada.
- IOCCG, 2000. Remote Sensing of Ocean Colour in Coastal, and Other Optically-Complex, Waters. Sathyendranath, S. (ed.), *Reports of the International Ocean-Colour Coordinating Group*, No. 3, IOCCG, Dartmouth, Canada.
- Ishii, M., Kimoto, M. and Kachi, M., 2003. Historical ocean subsurface temperature analysis with error estimates. *Monthly Weather Review*, 131(1), pp.51-73.
- Ishii, M., Shouji, A., Sugimoto, S. and Matsumoto, T., 2005. Objective analyses of sea surface temperature and marine meteorological variables for the 20th century using ICOADS and the Kobe collection. *International Journal of Climatology*, 25(7), pp.865-879.
- Ishii, M., Kimoto, M., Sakamoto, K. and Iwasaki, S.I., 2006. Steric sea level changes estimated from historical ocean subsurface temperature and salinity analyses. *Journal of oceanography*, 62(2), pp.155-170.
- Jacob, D.S. and Shay, L.K., 1999. Upper ocean response to tropical cyclone wind asymmetries. *Workshop on Extratropical Transition of Tropical Cyclones*, Munich, Germany.
- Jeffrey, S.W.; Mantoura, R.F.C., 1997. Development of pigment methods for oceanography: SCOR-supported working groups and objectives, in: Jeffrey, S.W.et al.(Ed.) *Phytoplankton pigments in oceanography: guidelines to modern methods*. *Monographs on Oceanographic Methodology*, 10, pp. 19-36.
- Joseph, P.V., Sooraj, K.P., Babu, C.A. and Sabin, T.P., 2005. A cold pool in the Bay of Bengal and its interaction with the active-break cycle of the monsoon. *Clivar Exchanges*, 34(10), p.3.

- Kamykowski, D., 1987. A preliminary biophysical model of the relationship between temperature and plant nutrients in the upper ocean. *Deep Sea Research Part A. Oceanographic Research Papers*, 34(7), pp.1067-1079.
- Kessler, W.S., 1990: Observations of long Rossby waves in the northern tropical Pacific. *J. Geophys. Res.*, 95, 5183-5217
- Kilpatrick, K.A., Podesta, G.P. and Evans, R., 2001. Overview of the NOAA/NASA advanced very high resolution radiometer Pathfinder algorithm for sea surface temperature and associated matchup database. *J. Geophys. Res.*, 106(C5), pp.9179-9197.
- Kumar, M.D., Naqvi, S.W.A., George, M.D. and Jayakumar, D.A., 1996. A sink for atmospheric carbon dioxide in the northeast Indian Ocean. *Journal of Geophysical Research: Oceans*, 101(C8), pp.18121-18125.
- Kumar, S., Ramesh, R., Sardesai, S. and Sheshshayee, M.S., 2004. High new production in the Bay of Bengal: Possible causes and implications. *Geophysical research letters*, 31(18), doi:10.1029/2004GL021005.
- Kutzbach, J.E., 1967. Empirical eigenvectors of sea-level pressure, surface temperature and precipitation complexes over North America. *Journal of Applied Meteorology*, 6(5), pp.791-802.
- LaFond, E.C., 1957, July. Oceanographic studies in the Bay of Bengal. In *Proceedings of the Indian Academy of Sciences-Section B* (Vol. 46, No. 1, pp. 1-46). Springer India.
- Large, W.G. and Pond, S., 1981. Open ocean momentum flux measurements in moderate to strong winds. *Journal of physical oceanography*, 11(3), pp.324-336
- Lee, C.M., Jones, B.H., Brink, K.H. and Fischer, A.S., 2000. The upper-ocean response to monsoonal forcing in the Arabian Sea: seasonal and spatial variability. *Deep Sea Research Part II: Topical Studies in Oceanography*, 47(7), pp.1177-1226.
- Lin, I., Liu, W.T., Wu, C.C., Wong, G.T., Hu, C., Chen, Z., Liang, W.D., Yang, Y. and Liu, K.K., 2003. New evidence for enhanced ocean primary production triggered by tropical cyclone. *Geophysical Research Letters*, 30(13), doi:10.1029/2003GL017141.
- Linz, P. and Wang, R., 2003. *Exploring numerical methods: An introduction to scientific computing using MATLAB*. Jones & Bartlett Learning.

- Longhurst, A.R., 2010. Ecological geography of the sea. *Academic Press*. San Diego, Calif., 1998.
- Lorenz, E.N., 1956. Empirical Orthogonal Functions and Statistical Weather Prediction. Technical report, *Statistical Forecast Project Report 1*, Dept. of Meteor., MIT, 49pp.
- Ludwig, F.L., Horel, J. and Whiteman, C.D., 2004. Using EOF analysis to identify important surface wind patterns in mountain valleys. *Journal of applied meteorology*, 43(7), pp.969-983.
- Luis, A.J. and Kawamura, H., 2000. Wintertime wind forcing and sea surface cooling near the south India tip observed using NSCAT and AVHRR. *Remote sensing of environment*, 73(1), pp.55-64.
- Luis, A.J. and Kawamura, H., 2001. Characteristics of atmospheric forcing and SST cooling events in the Gulf of Mannar during winter monsoon. *Remote sensing of environment*, 77(2), pp.139-148.
- Luis, A.J. and Kawamura, H., 2002. Dynamics and mechanism for sea surface cooling near the Indian tip during winter monsoon. *Journal of Geophysical Research: Oceans*, 107(C11), doi: 10.1029/2000JC000455
- Madhu, N.V., Maheswaran, P.A., Jyothibabu, R., Sunil, V., Revichandran, C., Balasubramanian, T., Gopalakrishnan, T.C. and Nair, K.K.C., 2002. Enhanced biological production off Chennai triggered by October 1999 super cyclone (Orissa). *Current Science*, 82:12.
- Madhupratap, M., Kumar, S.P., Bhattathiri, P.M.A., Kumar, M.D., Raghukumar, S., Nair, K.K.C. and Ramaiah, N., 1996. Mechanism of the biological response to winter cooling in the northeastern Arabian Sea. *Nature*, 384(6609), pp.549-552.
- Madhupratap, M., Gauns, M., Ramaiah, N., Kumar, S.P., Muraleedharan, P.M., De Sousa, S.N., Sardesai, S. and Muraleedharan, U., 2003. Biogeochemistry of the Bay of Bengal: physical, chemical and primary productivity characteristics of the central and western Bay of Bengal during summer monsoon 2001. *Deep Sea Research Part II: Topical Studies in Oceanography*, 50(5), pp.881-896.
- Madhusoodanan, P. and James, V.V., 2003. Thermohaline features of the subsurface cyclonic Eddy the south central Bay of Bengal during August 1999. *Journal of Earth System Science*, 112(2), pp.233-237.

- Malone, T.C., Pike, S.E. and Conley, D.J., 1993. Transient variations in phytoplankton productivity at the JGOFS Bermuda time series station. *Deep Sea Research Part I: Oceanographic Research Papers*, 40(5), pp.903-924.
- Marshall, J. and Plumb, R.A., 2013. *Atmosphere, ocean and climate dynamics: an introductory text* (Vol. 21). Academic Press.
- Martin, J.M., Burton, J.D. and Eisma, D. eds., 1981. *River inputs to ocean systems. United Nations Environment Programme*, 384 pp., United Nations Press, Geneva, Switzerland, 1981.
- Martin, S., 2004. An introduction to ocean remote sensing, Chpt.6, *Cambridge University Press, Cambridge, United Kingdom*, pp 454. ISBN 0521802806.
- McCreary, J.P., Kundu, P.K. and Molinari, R.L., 1993. A numerical investigation of dynamics, thermodynamics and mixed-layer processes in the Indian Ocean. *Progress in Oceanography*, 31(3), pp.181-244.
- McCreary, J.P., Han, W., Shankar, D. and Shetye, S.R., 1996. Dynamics of the East India Coastal Current: 2. Numerical solutions. *Journal of Geophysical Research: Oceans*, 101(C6), pp.13993-14010.
- McPhaden, M.J., 1993. TOGA-TAO and the 1991–93 El Niño-Southern oscillation event. *Oceanography*, 6(2), pp.36-44.
- Meinen, C.S. and McPhaden, M.J., 2000. Observations of warm water volume changes in the equatorial Pacific and their relationship to El Niño and La Niña. *Journal of Climate*, 13(20), pp.3551-3559.
- Menkes, C.E., Lengaigne, M., Marchesiello, P., Jourdain, N.C., Vincent, E.M., Lefèvre, J., Chauvin, F. and Royer, J.F., 2012. Comparison of tropical cyclogenesis indices on seasonal to interannual timescales. *Climate dynamics*, 38(1-2), pp.301-321.
- Milliff, R.F. and Morzel, J., 2001. The global distribution of the time-average wind stress curl from NSCAT. *Journal of the Atmospheric Sciences*, 58(2), pp.109-131.
- Minnett, P.J., Knuteson, R.O., Best, F.A., Osborne, B.J., Hanafin, J.A. and Brown, O.B., 2001. The marine-atmospheric emitted radiance interferometer: A high-accuracy, seagoing infrared spectroradiometer. *Journal of atmospheric and oceanic technology*, 18(6), pp.994-1013.

- Monterey, G.I. and Levitus, S., 1997. United States. National Environmental Satellite, Data, and Information Service, *Seasonal variability of mixed layer depth for the world ocean*. US Department of Commerce, National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service.
- Morel, A. and Prieur, L., 1977. Analysis of variations in ocean color. *Limnology and oceanography*, 22(4), pp.709-722.
- Murty, C.S. and Varadachari, V.V.R., 1968. Upwelling along the east coast of India. *Bull. Nat. Inst. Sci. India*, 36, pp.80-86.
- Ning, X.R., Chai, F., Xue, H., Cai, Y., Liu, C. and Shi, J., 2004. Physical-biological oceanographic coupling influencing phytoplankton and primary production in the South China Sea. *Journal of Geophysical Research: Oceans*, 109(C10), doi:10.1029/2004JC002365.
- O'Brien, J.J. and Reid, R.O., 1967. The non-linear response of a two-layer, baroclinic ocean to a stationary, axially-symmetric hurricane: Part I. Upwelling induced by momentum transfer. *Journal of the Atmospheric Sciences*, 24(2), pp.197-207.
- O'Reilly, J.E., Maritorena, S., Mitchell, B.G., Siegel, D.A., Carder, K.L., Garver, S.A., Kahru, M. and McClain, C., 1998. Ocean color chlorophyll algorithms for SeaWiFS. *Journal of Geophysical Research: Oceans*, 103(C11), pp.24937-24953.
- O'Reilly, J.E., and 24 Coauthors, 2000: SeaWiFS Postlaunch Calibration and Validation Analyses, Part 3. *NASA Tech. Memo. 2000-206892, Vol. 11*, S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, 49 pp.
- Pickard, G.L. and Emery, W.J., 1990. *Descriptive physical oceanography: an introduction*. Elsevier.
- Pickett, M.H. and Paduan, J.D., 2003. Ekman transport and pumping in the California Current based on the US Navy's high-resolution atmospheric model (COAMPS). *Journal of Geophysical Research: Oceans*, 108(C10), doi:10.1029/2003JC001902.
- Platt, T. and Sathyendranath, S., 1988. Oceanic primary production: estimation by remote sensing at local and regional scales. *Science*, 241(4873), pp.1613-1620.

- Potemra, J.T., Luther, M.E. and O'Brien, J.J., 1991. The seasonal circulation of the upper ocean in the Bay of Bengal. *Journal of Geophysical Research: Oceans*, 96(C7), pp.12667-12683.
- Prasanna Kumar, S., Madhupratap, M., Kumar, M.D., Gauns, M., Muraleedharan, P.M., Sarma, V.V.S.S. and De Souza, S.N., 2000. Physical control of primary productivity on a seasonal scale in central and eastern Arabian Sea. *Journal of Earth System Science*, 109(4), pp.433-441.
- Prasannakumar, S., Madhupratap, M., Dileepkumar, M., Muraleedharan, P.M., DeSouza, S.N., Gauns, M. and Sarma, V.V.S.S., 2001. High biological productivity in the central Arabian Sea during the summer monsoon driven by Ekman pumping and lateral advection. *Current Science*, 81, pp. 1633– 1638.
- Prasanna Kumar, S., Muraleedharan, P.M., Prasad, T.G., Gauns, M., Ramaiah, N., De Souza, S.N., Sardesai, S. and Madhupratap, M., 2002. Why is the Bay of Bengal less productive during summer monsoon compared to the Arabian Sea?. *Geophysical Research Letters*, 29(24), 2235, doi:10.1029/2002GL016013.
- Prasanna Kumar, S., Nuncio, M., Narvekar, J., Kumar, A., Sardesai, S., De Souza, S.N., Gauns, M., Ramaiah, N. and Madhupratap, M., 2004. Are eddies nature's trigger to enhance biological productivity in the Bay of Bengal?. *Geophysical Research Letters*, 31(7), doi:10.1029/2003GL019274.
- Prasanna Kumar, S., Nuncio, M., Ramaiah, N., Sardesai, S., Narvekar, J., Fernandes, V. and Paul, J.T., 2007. Eddy-mediated biological productivity in the Bay of Bengal during fall and spring intermonsoons. *Deep Sea Research Part I: Oceanographic Research Papers*, 54(9), pp.1619-1640.
- Prasannakumar, S., Nuncio, M., Narvekar, J., Ramaiah, N., Sardesai, S., Gauns, M., Fernandes, V., Paul, J.T., Jyothibabu, R. and Jayaraj, K.A., 2010. Seasonal cycle of physical forcing and biological response in the Bay of Bengal. *Indian Journal of Marine Sciences*, 39, pp.388-405.
- Preisendorfer, R.W., 1988. Principal component analysis in meteorology and oceanography. Ed. Curtis D. Mobley. Vol. 425. Amsterdam: Elsevier, 1988.
- Premkumar, K., Ravichandran, M., Kalsi, S.R., Sengupta, D. and Gadgil, S., 2000. First results from a new observational system over the Indian seas. *Current Science*, 78(3), pp.323-330.

- Price, J.F., 1981. Upper ocean response to a hurricane. *Journal of Physical Oceanography*, 11(2), pp.153-175.
- Quikscat Scatterometer Mean Wind Field Products User Manual, Réf. : C2-MUT-W-03-IF, Version : 1.0, vol 2, CERSAT – IFREMER February 2002.[Available online at ftp://ftp.ifremer.fr/ifremer/cersat/documentation/gridded/mwf-quickcat/mwf_vol2.pdf]
- Ramesh Kumar, M.R. and Sankar, S., 2010. Impact of global warming on cyclonic storms over north Indian Ocean. *Indian Journal of Marine Sciences*, 39, pp.516-520
- Rao, A.D., 2002. Variability of wind stress curl over the Indian Ocean during years 1970-1995. *Indian Journal of Marine Sciences*, 31(2), pp.87-92.
- Rao, A.D., Babu, S.V. and Dube, S.K., 2004. Impact of a tropical cyclone on coastal upwelling processes. *Natural Hazards*, 31(2), pp.415-435.
- Rao, A.D. and Chamarthi, S., 1997. A multi-level numerical model of coastal upwelling: A diagnostic study. *International Journal for Numerical Methods in Fluids*, 24(1), 17-59.
- Rao, A.D., Joshi, M. and Babu, S.V., 2005. A three-dimensional numerical model of coastal upwelling along the west coast of India. *Mathematical and computer modelling*, 41(2-3), 177-195.
- Rao, A.D., Joshi, M. and Ravichandran, M., 2008. Oceanic upwelling and downwelling processes in waters off the west coast of India. *Ocean Dynamics*, 58(3-4), 213-226.
- Rao, K.H., Choudhury, S.B., Das, S.K., Mishra, R.K. and SHAW, B.P., 2002a, Evaluation of VGPM model for estimation of primary productivity along Paradip coast, east coast of India. IAPRS and SIS, *Resource and Environment Monitoring*, 34, pp. 1413–1417.
- Rao, K.H., Smitha, A. and Ali, M.M., 2006b. A study on cyclone induced productivity in south-western Bay of Bengal during November-December 2000 using MODIS (SST and chlorophyll-a) and altimeter sea surface height observations. *Indian Journal of Marine Sciences*, 35(2), pp.153-160.
- Rao, L.V.G., and Shree Ram, P., 2005. Upper ocean physical processes in the Tropical Indian Ocean, *Monograph, 68pp & Figures*, NIO, Goa. (<http://hdl.handle.net/2264/93>)

- Rao, R.R., Mathew, B. and Kumar, P.H., 1993. A summary of results on thermohaline variability in the upper layers of the east central Arabian Sea and Bay of Bengal during summer monsoon experiments. *Deep Sea Research Part I: Oceanographic Research Papers*, 40(8), pp.1647-1672, doi:10.1016/0967-0637(93)90020-4.
- Rao, R.R., Kumar, G., Ravichandran, M., Samala, B.K. and Sreedevi, N., 2006a. Observed mini cold pool off the southern tip of India and its intrusion into the south central Bay of Bengal during summer monsoon season. *Geophysical research letters*, 33(6), doi:10.1029/2005GL025382.
- Rao, S.A., Behera, S.K., Masumoto, Y. and Yamagata, T., 2002b. Interannual subsurface variability in the tropical Indian Ocean with a special emphasis on the Indian Ocean dipole. *Deep Sea Research Part II: Topical Studies in Oceanography*, 49(7), pp.1549-1572.
- Rao, S.A., Saha, S.K., Pokhrel, S., Sundar, D., Dhakate, A.R., Mahapatra, S., Ali, S., Chaudhari, H.S., Shreeram, P., Vasimalla, S. and Srikanth, A.S., 2011. Modulation of SST, SSS over northern Bay of Bengal on ISO time scale. *Journal of Geophysical Research: Oceans*, 116(C9), C09026, doi:10.1029/2010JC006804.
- Rao, T.N., Rao, D.P., Rao, B.P. and Raju, V.R., 1986. Upwelling and sinking along Visakhapatnam coast. *Indian Journal of Marine Sciences*, 15(2), pp.84-87.
- Reynolds, R.W., Folland, C.K. and Parker, D.E., 1989. Biases in satellite-derived sea-surface-temperature data. *Nature* 341, 728 (1989).
- Reynolds, R.W., 1993. Impact of Mount Pinatubo aerosols on satellite-derived sea surface temperatures. *Journal of climate*, 6(4), pp.768-774.
- Ryther, J.H. and Yentsch, C.S., 1957. The estimation of phytoplankton production in the ocean from chlorophyll and light data. *Limnology and Oceanography*, 2(3), pp.281-286.
- Ryther, J.H., 1969. Photosynthesis and fish production in the sea. The production of organic matter and its conversion to higher forms of life vary throughout the world ocean. *American Association for the Advancement of Science. Science*, 166, pp.72-76.

- Sachoemar, S.I., Yanagi, T., Hendiarti, N., Sadly, M. and Meliani, F., 2010. Seasonal variability of sea surface chlorophyll-a and abundance of pelagic fish in Lampung Bay, Southern Coastal Area of Sumatra, Indonesia.
- Saji, N.H., Goswami, B.N., Vinayachandran, P.N. and Yamagata, T., 1999. A dipole mode in the tropical Indian Ocean. *Nature*, 401(6751), pp.360-363.
- Sanders, F and Charnock, Henry., "Wind Stress," *AccessScience* (McGraw-Hill Education, 2014), <http://dx.doi.org/10.1036/1097-8542.746600>
- Sarmiento, J.L., Hughes, T.M., Stouffer, R.J. and Manabe, S., 1998. Simulated response of the ocean carbon cycle to anthropogenic climate warming. *Nature*, 393(6682), pp.245-249.
- Sathyendranath, S., Gouveia, A.D., Shetye, S.R., Ravindran, P. and Platt, T., 1991. Biological control of surface temperature in the Arabian Sea. *Nature*, 349, pp. 54–56.
- Schott, F.A. and McCreary, J.P., 2001. The monsoon circulation of the Indian Ocean. *Progress in Oceanography*, 51(1), pp.1-123.
- Schott, F. A., Xie, S.-P, and McCreary Jr., J.P., 2009. Indian Ocean circulation and climate variability. *Rev. Geophys.*, 47, RG1002, doi:10.1029/2007RG000245.
- Sengupta, D., Ray, P.K. and Bhat, G.S., 2002. Spring warming of the eastern Arabian Sea and Bay of Bengal from buoy data. *Geophysical research letters*, 29(15).
- Sengupta, D., Senan, R., Goswami, B.N. and Vialard, J., 2007. Intraseasonal variability of equatorial Indian Ocean zonal currents. *Journal of Climate*, 20(13), pp.3036-3055.
- Sengupta, D., Goddalahundi, B.R. and Anitha, D.S., 2008. Cyclone-induced mixing does not cool SST in the post-monsoon North Bay of Bengal. *Atmospheric Science Letters*, 9(1), pp.1-6.
- Shankar, D., McCreary, J.P., Han, W. and Shetye, S.R., 1996. Dynamics of the East India Coastal Current: 1. Analytic solutions forced by interior Ekman pumping and local alongshore winds. *Journal of Geophysical Research: Oceans*, 101(C6), pp.13975-13991.
- Shankar, D., Vinayachandran, P.N. and Unnikrishnan, A.S., 2002. The monsoon currents in the north Indian Ocean. *Progress in oceanography*, 52(1), pp.63-120.

- Shenoi, S.S.C., Shankar, D. and Shetye, S.R., 2002. Differences in heat budgets of the near surface Arabian Sea and Bay of Bengal: Implications for the summer monsoon. *Journal of Geophysical Research: Oceans*, 107(C6), doi:10.1029/2000JC000679.
- Shenoi, S.S.C., Shankar, D., Michael, G.S., Kurian, J., Varma, K.K., Kumar, M.R., Almeida, A.M., Unnikrishnan, A.S., Fernandes, W., Barreto, N. and Gnanaseelan, C., 2005. Hydrography and water masses in the southeastern Arabian Sea during March–June 2003. *Journal of earth system science*, 114(5), pp.475-491.
- Shetye, S.R., Shenoi, S.S.C., Gouveia, A.D., Michael, G.S., Sundar, D. and Nampoothiri, G., 1991. Wind-driven coastal upwelling along the western boundary of the Bay of Bengal during the southwest monsoon. *Continental Shelf Research*, 11(11), pp.1397-1408.
- Shetye, S.R., Gouveia, A.D., Shenoi, S.S.C., Sundar, D., Michael, G.S. and Nampoothiri, G., 1993. The western boundary current of the seasonal subtropical gyre in the Bay of Bengal. *J. Geophys. Res*, 98(C1), pp.945-954.
- Shetye, S.R., Gouveia, A.D., Shankar, D., Shenoi, S.S.C., Vinayachandran, P.N., Sundar, D., Michael, G.S. and Nampoothiri, G., 1996. Hydrography and circulation in the western Bay of Bengal during the northeast monsoon. *Journal of Geophysical Research: Oceans*, 101(C6), pp.14011-14025.
- Shetye, S.R. and Gouveia, A.D., 1998. Coastal circulation in the north Indian Ocean: Coastal segment (14, SW). *The Sea*, Volume 11 (Allan R. Robinson and Kenneth H. Brink, eds.), John Wiley and Sons, Inc, Ch. 18, pp. 523–556.
- Singh, O.P., Khan, T.M.A. And Rahman, M.S., 2001. Has The Frequency Of Intense Tropical Cyclones Increased In The North Indian Ocean?. *Current Science-Bangalore-*, 80(4), pp.575-580.
- Smith, L.I., 2002. A tutorial on principal components analysis. *Cornell University, USA*, 51, p.52.
- Smith, S.D., 1988. Coefficients for sea surface wind stress, heat flux, and wind profiles as a function of wind speed and temperature. *Journal of Geophysical Research: Oceans*, 93(C12), pp.15467-15472.
- Smith, R. Upwelling, volume 6, chapter 1, pages 11 – 46. University College London Press, 1968. 8

- Smitha, A., Rao, K.H. and Sengupta, D., 2006. Effect of May 2003 tropical cyclone on physical and biological processes in the Bay of Bengal. *International Journal of Remote Sensing*, 27(23), pp.5301-5314.
- Son, S., Platt, T., Bouman, H., Lee, D. and Sathyendranath, S., 2006. Satellite observation of chlorophyll and nutrients increase induced by Typhoon Megi in the Japan/East Sea. *Geophysical research letters*, 33(5), doi:10.1029/2005GL025065.
- Stewart, R. H. (1985). Methods of satellite oceanography, *Univ. of California Press*.
- Stull, R.B., 1994. *An introduction to boundary layer meteorology* (Vol. 13). Springer Science & Business Media.
- Subrahmanyam, B., Rao, K.H., Srinivasa Rao, N., Murty, V.S.N. and Sharp, R.J., 2002. Influence of a tropical cyclone on chlorophyll-a concentration in the Arabian Sea. *Geophysical Research Letters*, 29(22), doi:10.1029/2002GL015892.
- Subramanian, V., 1993. Sediment load of Indian rivers. *Current Science*, 64(11-12), pp. 928-930.
- Vinayachandran, P.N. and Shetye, S.R., 1991. The warm pool in the Indian Ocean. *Proceedings of the Indian Academy of Sciences-Earth and Planetary Sciences*, 100(2), pp.165-175.
- Vinayachandran, P. N., Seasonal Cycle of the Hydrography and Circulation of the Bay of Bengal, M Sc (Engg.) Thesis, *Indian Institute of Science, Bangalore*, 1992, pp. 61.
- Vinayachandran, P.N., Shetye, S.R., Sengupta, D. and Gadgil, S., 1996. Forcing mechanisms of the Bay of Bengal circulation. *Current Science*, 71(10), pp.753-763.
- Vinayachandran, P.N. and Yamagata, T., 1998. Monsoon response of the sea around Sri Lanka: generation of thermal domes and anticyclonic vortices. *Journal of Physical Oceanography*, 28(10), pp.1946-1960.
- Vinayachandran, P.N. and Mathew, S., 2003. Phytoplankton bloom in the Bay of Bengal during the northeast monsoon and its intensification by cyclones. *Geophysical Research Letters*, 30(11), doi:10.1029/2002GL016717.

- Vinayachandran, P.N., Chauhan, P., Mohan, M. and Nayak, S., 2004. Biological response of the sea around Sri Lanka to summer monsoon. *Geophysical Research Letters*, 31(1), doi:10.1029/2003GL018533.
- Vinayachandran, P.N., Kagimoto, T., Masumoto, Y., Chauhan, P., Nayak, S.R. and Yamagata, T., 2005. Bifurcation of the East India coastal current east of Sri Lanka. *Geophysical research letters*, 32(15), doi:10.1029/2005GL022864.
- Vinayachandran, P.N. and Kurian, J., 2007. Hydrographic observations and model simulation of the Bay of Bengal freshwater plume. *Deep Sea Research Part I: Oceanographic Research Papers*, 54(4), pp.471-486.
- Vinayachandran, P.N. and Saji, N.H., 2008. Mechanisms of South Indian Ocean intraseasonal cooling. *Geophys. Res. Lett*, 35, p.L23607.
- Vinayachandran, P.N., 2009. Impact of physical processes on chlorophyll distribution in the Bay of Bengal. *Indian Ocean Biogeochemical Processes and Ecological Variability*, pp.71-86, doi:10.1029/2008GM000705.
- Vinayachandran, P.N., Neema, C.P., Mathew, S. and Remya, R., 2012. Mechanisms of summer intraseasonal sea surface temperature oscillations in the Bay of Bengal. *Journal of Geophysical Research: Oceans*, 117(C1), <http://dx.doi.org/10.1029/2011JC007433>.
- Wentz, F.J., 1997. A well-calibrated ocean algorithm for special sensor microwave/imager. *Journal of Geophysical Research: Oceans*, 102(C4), pp.8703-8718.
- Wentz, F.J., Gentemann, C., Smith, D. and Chelton, D., 2000. Satellite measurements of sea surface temperature through clouds. *Science*, 288(5467), pp.847-850.
- Williams, R.G. and Follows, M.J., 2003. Physical transport of nutrients and the maintenance of biological production. In *Ocean Biogeochemistry* (pp. 19-51), edited by M. J. R. Fasham, chap. 2, pp. 19– 51, Springer Berlin Heidelberg.
- Yoder, J.A., McClain, C.R., Feldman, G.C. and Esaias, W.E., 1993. Annual cycles of phytoplankton chlorophyll concentrations in the global ocean: a satellite view. *Global Biogeochemical Cycles*, 7(1), pp.181-193.
- Yoder, J.A. and Kennelly, M.A., 2003. Seasonal and ENSO variability in global ocean phytoplankton chlorophyll derived from 4 years of SeaWiFS

measurements. *Global Biogeochemical Cycles*, 17(4), p.1112, doi:10.1029/2002GB001942.

Yu, L., O'Brien, J.J. and Yang, J., 1991. On the remote forcing of the circulation in the Bay of Bengal. *Journal of Geophysical Research: Oceans*, 96(C11), pp.20449-20454.

Yu, L., 2003. Variability of the depth of the 20 C isotherm along 6 N in the Bay of Bengal: Its response to remote and local forcing and its relation to satellite SSH variability. *Deep Sea Research Part II: Topical Studies in Oceanography*, 50(12), pp.2285-2304.

List of Publications

Smitha, A., Rao, K.H. and Sengupta, D., 2006. Effect of May 2003 tropical cyclone on physical and biological processes in the Bay of Bengal. *International Journal of Remote Sensing*, 27(23), pp.5301-5314.

Rao, K.H., Smitha, A. and Ali, M.M., 2006. A study on cyclone induced productivity in south-western Bay of Bengal during November-December 2000 using MODIS (SST and chlorophyll-a) and altimeter sea surface height observations. *Indian Journal of Marine Sciences*, 35(2), pp.153-160.