

G. S. Bhat

**Address:**

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Education:

Qualification	University / Institute	Subject / field	Remarks
Ph.D. 1990	IISc Bangalore	Aerospace Engg.	Thesis won 2 gold medals
M.E. 1983	IISc Bangalore	Mechanical Engg.	First class with distinction
B.Tech. 1981	IIT Mumbai	Mechanical Engg.	First class with distinction

Professional Career

Period	Organisation	Designation
2006-2013	IISc Bengaluru	Chairman, CAOS
2003-	IISc Bangalore	Professor
1997-2003	IISc Bangalore	Associate Professor
1991-97	IISc Bangalore	Assistant Professor
1989-91	IISc Bangalore	Scientific Officer
1984-89	IISc Bangalore	Scientific Assistant
1997-98	Florida State University, USA	Visiting Scientist

Research Interests:

Tropical convection, cloud physics and dynamics, atmospheric boundary layer, laboratory modelling of atmospheric phenomena, field experiments, ocean-atmosphere coupling, intraseasonal variation.

Courses taught

- Atmospheric Boundary Layer
- Observational Techniques
- Physical Meteorology
- Tropical Convection

Awards & Recognitions:

- J. C. Bose Fellowship**, Department of Science and Technology, New Delhi, 2010
- Prof. Satish Dhawan Young Engineer Award** (Earth Sciences) for the year 2006 by the Govt. Karnataka
- Shanti Swarup Bhatnagar Prize** in earth, Atmosphere, Ocean and Planetary Sciences, given by the Council of Scientific & Industrial Research, New Delhi, 2002
- PRL Award** for the year 2001 in the field of Earth and Planetary Sciences given by Physical Research Laboratory, Ahmedabad.
- P S Narayana medal** for the best Ph.D. thesis in the Division of Mechanical Sciences, Indian Institute of Science, for the year 1990.
- Sabita Choudhuri medal** for the best Ph.D. thesis in the Department of Aerospace Engineering, Indian Institute of Science, for the year 1990.

Fellow/Membership of Professional Bodies:

Fellow, Indian Academy of Sciences, Bengaluru India

Member, India Meteorological Society, New Delhi.

Member, Ocean Society of India, Cochin

Brief Profile of Professional Career

His engineering background and opting to work in atmospheric sciences enabled him to bring a unique combination of expertise to the research in the field of atmospheric Sciences in India. He has wide research interests that include tropical convection, ocean-atmosphere interactions, clouds, boundary layer, flow turbulence, dynamical chaos and tropical intraseasonal oscillation. G S Bhat has carried out laboratory experiments, field experiments over land and ocean, theoretical studies and data analysis. He was the **Principal Investigator** for the atmospheric component in the three Indian national observational experiments under the **Indian Climate Research Programme (ICRP)** viz. the **Bay of Bengal Monsoon Experiment (BOBMEX)** carried out during July-August 1999, the **Arabian Sea Monsoon Experiment (ARMEX)** carried out over the west coast of India and Arabian Sea during 2002-2003, and ongoing **Continental Tropical Convergence Zone (CTCZ)** programme. Crucial data has been successfully collected from research ships using the state of the art instruments under the raging monsoon conditions over the Bay of Bengal and Arabian Sea. BOBMEX, ARMEX and CTCZ have added a different dimension to the kind of research work done from the country in the areas of atmospheric sciences and oceanography and have drawn the attention of international community.

He is/was a member of several committees including.

- Chairman, Asian Fluid Mechanics Committee
- Chairman, Indian National Committee for Asian Congress of Fluid Mechanics
- Member, International Advisory Panel, Ministry of Earth Sciences, Govt. India
- Chairman, Technical Expert Committee for the National Facility for Airborne Research, IITM, Pune (ESSO)
- Member, Scientific Steering Committee for Continental Tropical Convergence Zone (CTCZ) Field Campaign under ICRP (MoES)
- Member, Programme Advisory Committee-Atmospheric Sciences, SERB (DST)
- Member, Scientific Advisory Committee, National Atmospheric Research Facility, Gadanki (ISRO)
- Member, Research Advisory Committee, Indian Institute of Tropical Meteorology, Pune (ESSO)
- Was a Member, Expert Panel on Fast Track Young Scientist in Earth & Atmospheric Sciences (DST)
- Member, Editorial Board, Journal of Earth System Science
- Member, Editorial Board, Mausam
- Member, Sectional Committee (Earth & Planetary Sciences), Indian Academy of Sciences
- Chairman, the task team constituted by ISRO for Doppler Weather Radars Calibration

Important Publications

- G.S. Bhat and R. Jagannathan, 2012: Moisture depletion in the surface layer in response to an annular solar eclipse. *J. Atmospheric and Solar-Terrestrial Physics*, **80**, 60–67.
- R. Narasimha, S. S. Diwana, S. Duvvuria, K. R. Sreenivasa and G. S. Bhat, 2011: Laboratory simulations show diabatic heating drives cumulus-cloud evolution and entrainment. *PNAS*, doi/10.1073/pnas.1112281108.
- Bhat, G. S., Prashanth L. Rao and V. G. Sangolli, 2010: Atmospheric Boundary-Layer across Hadley and Ferrel Cells over the Indian Ocean. *Current Science*, **99**, 1378-1383.
- L. Kiranmayi and G. S. Bhat, 2009: Quasi-periodic, global oscillations in sea level pressure on intraseasonal timescales, *Climate Dynamics*, DOI 10.1007/s00382-008-0413-7.
- Bhat G. S. and Arunchandra S.C., 2008: Energy Budget over a Land Surface during the Summer Monsoon. *J. Earth System Sci.* 117, 911–923.
- G. S. Bhat and R. Narasimha, 2007: Indian summer monsoon experiments, *Current Science*, **93**, 153-164.
- G. S. Bhat 2006: The Indian drought of 2002: a subseasonal phenomenon?, *Q. J. Roy. Meteorol. Soc.*, **132**, 2583-2602.
- G. S. Bhat 2006: Near surface temperature inversion over the Arabian Sea due to natural aerosols. *Geophys. Res.Lett.* **33**, L02802, doi:10.1029/2005GL024157.
- G. S. Bhat, 2005: Convection inhibition energy of the inversion and the suppressed rainfall over the Arabian Sea during July 2002. *Mausam* (ARMEX Special Issue), **56**, 89-96.
- G. S. Bhat, G. A. Vecchi and S. Gadgil, 2004: Sea Surface Temperature of the Bay of Bengal derived from TRMM Microwave Imager. *J. Atmos. Ocean Tech.* **21**, 1283-1290.
- Bhat, G. S., 2003: Measurement of air-sea fluxes over the Indian Ocean and Bay of Bengal. *J. Climate*, **16**, 767-775.
- Bhat, G. S., 2002: Near surface variations and surface fluxes over the North Bay of Bengal during the 1999 Indian Summer Monsoon. *J. Geophys. Res., Atmospheres*, **107**, 4336, 10.1029/2001JD000382.
- Bhat G. S., S. Gadgil, P. V. Harish Kumar, S. R. Kalsi, Madhusoodanan, V. S. N. Murty, C. V. K. Prasada Rao, V. Ramesh Babu, L. V. G. Rao, R. R. Rao, M. Ravichandran, K. G. Reddy, P. Sanjeeva Rao, D. Sengupta, D. R. Sikka, J. Swain, P. N. Vinayachandran, 2001: BOBMEX - the Bay of Bengal Monsoon Experiment. *Bull. Amer. Meteor. Soc.*, **82**, 2217-2243.
- Gambheer, A. V., and G. S. Bhat, 2001: Diurnal variation of deep cloud systems over the Indian region using INSAT-1B pixel data. *Meteorol. Atmos. Phys.* **78**, 215-225.
- Gambheer, A. V. and G. S. Bhat, 2000: Life Cycle characteristics of deep cloud systems over the Indian Region Using INSAT-1B Pixel Data. *Mon. Wea. Rev.*, **128**, 4071-4083.
- Venkatakrishnan, L., G. S. Bhat and R. Narasimha, 1999: Experiments on a plume with off-source heating: Implications for cloud fluid dynamics. *J. Geophys. Res.*, **104D**, 14271-14281.
- Bhat, G. S., 1998: The dependence of deep cloud mass and area cover on convective and large-scale processes. *J. Atmos. Sci.*, **55**, 2993-2999.
- Bhat, G S and R Narasimha, 1996: A volumetrically heated jet: Large eddy structure and entrainment characteristics. *J. Fluid Mech.* **325**, 303-330
- Bhat, G S, J Srinivasan and Sulochana Gadgil, 1996: Tropical deep convection, convective available potential energy and sea surface temperature. *J. Meteor. Soc. Japan*, **74**, 155-166.
- Bhat, G S, R Narasimha and S Wiggins, 1990: A simple dynamical system that mimics open-flow turbulence. *Physics of Fluids*, **A2(11)**, 1983-2001.