

Resume

Falguni Patadia

**MOG/RESIPA, 6049,
Space Applications Centre,
Indian Space Research Organisation,
Ahmedabad, Gujarat 380015, India.**

**Phone: +91-079-6916049 (O), 6860495 (R)
Fax: +91-079-3735431 (O)
Email: falgunipatadia@rediffmail.com
Homepage: <http://www.geocities.com/pgudia>**



Objective:

To augment my knowledge in the field of Atmospheric Sciences and exploit it with the my hardworking capacity, innovative and creative thinking to take up the challenges in this field of research and development.

Summary of Experience:

Over two years of experience of research and development in the field of satellite microwave remote sensing of tropical cyclones over the Indian Oceans. Programming experience in Fortran, IDL and working knowledge on Unix based platforms along with experience of handling several graphic packages.

Current Position:

Working as Research Fellow since May-2001 in the Atmospheric Sciences Division (ASD) of Meteorological and Oceanography Group (MOG) at Space Applications Centre (SAC), Indian Space Research Organization (ISRO), Ahmedabad, Gujarat, India.

Educational Qualifications:

- M.Tech., 2002, Space and Atmospheric Sciences, CSSTEAP, Physical Research Laboratory, Ahmedabad and Andhra University, Visakhapatnam, India.
- M.Sc. Physics, 2000, School of Physics, Devi Ahilya University, Indore, India
- B.Sc. Electronics, 1998, Devi Ahilya University, Indore, India.
- **GRE/TOEFL Dates: DECEMBER 2003**

Major Projects Taken Up At Space Application Center, ISRO:

Multisatellite Observations of Indian Ocean Tropical Cyclones

Key responsibilities include:

- Analysis of TRMM-TMI, DMSP-SSM/I, INSAT-VHRR, QUKSCAT & ERS-Scatterometer Observations
- To assess the potential of multi-satellite observations in the study of the “ Structure “ of tropical cyclones
- Identification of parameters leading to intensification/movement of tropical cyclones
- Objective determination of cyclone center using microwave observations
- Study of the intensification and diurnal variation of cyclones using both microwave and infrared observations
- Identification of the type of clouds associated with the cyclones using infrared observations
- Identification of the evolutionary signatures using infrared and microwave observations

Scope for further work:

(A) Observations Related Work

- Study of satellite observations of precursors to cyclone intensification i.e (i) moisture transport (ii) latent heat release in core and bands. Use of more direct parameters (like QSCAT observations) for intensification.
- Cloud type identification using VIS/IR and texture information (we used only IR grey values earlier using histogram technique) and to see how the clouds or their ratio can be an indicator to intensification/decay

- Development of a new genetic algorithm for the prediction of the tracks of Indian Ocean tropical cyclones.

(B) Model Related Work:

- Analysis of model simulated cyclone structures:
 - (i) To understand vertical structure of u, v, t, q, w ; using statistical method (EOF etc)
 - (ii) To provide simple mathematical relationship b/w vertical structure and satellite observation. This is to define a bogus vortex using satellite parameters like size, center and asymmetries.
- Assimilation of satellite data such as QSCAT Winds, Rain and PW in the mesoscale model (MM5) for the study of intensity and track prediction of Indian Ocean tropical cyclones.
- Empirical Methods for track prediction (viz. Genetic Algorithm)

Other Projects Work During M.Tech., M.Sc. & B.Sc.:

- Study of the Intensification & Movement of Tropical Cyclones Using Satellite Data, 2001-2002, Major project in M.Tech., Space Application Centre, ISRO, Ahmedabad, India
- Making of a six inch Lens and Fabricating a Newtonian Telescope, 1999-2000, Major project in M.Sc., Inter University Center for Astronomy and Astrophysics, Pune, India
- Measurement of Electron Density Using Rocket- borne Langmuir Probe, 1999, Two month summer project at Physical Research Laboratory, Ahmedabad, India
- Design & Study of Flip – Flops, Minor project during B.Sc. 1998, Devi Ahilya University Indore, India.

Computer Skills:

Platform	:	SGI Octane, SUN Ultra, IBM Escala PowerPC, IBM Pentium, IBM Itanium (Linux 2.1 AS;4 processor).
Operating Systems	:	Unix (Irix-6.4, Aix-4.3, Soloris-3.1), Linux, Windows.
Programming Language	:	Fortran, 8085 ALP, C++ & IDL.
Graphics Packages	:	GrADS, Surfer, Grapher, EXCEL, ErDAS (image processing)

Publications, Conferences & Proceedings:

- Multisatellite observation of Indian Ocean tropical cyclone
Falguni Patadia, C.M.Kishtawal, and P.C.Joshi
(Presented at ISRS Symposium at Ahmedabad, India in December 2001)
- Surface Wind and Precipitation Patterns of Indian Ocean Tropical Cyclone: A Study Using Satellite Observations
Falguni Patadia, C.M.Kishtawal, and P.C.Joshi
(Presented at TROPMET – 2002 Symposium held at Bhubaneshwar, India– ***This paper bagged the award of the “Best Paper presented by a young scientist”***)
- Observations of Indian Ocean tropical cyclones by 85 GHz channel of TRMM microwave imager (TMI)
C.M.Kishtawal, **Falguni Patadia**, and P.C.Joshi
(Communicated to *International Journal of REMOTE SENSING*)
- Geolocation of Indian Ocean Tropical Cyclones Using 85 GHz Observations from TRMM Microwave Imager (TMI)
Falguni Patadia, C.M.Kishtawal, P.K.Pal, and P.C.Joshi
(Communicated to *Current Science*)
- Forecasting Summer Rainfall Over India Using Genetic Algorithm
C.M.Kishtawal, Sujit Basu, **Falguni Patadia** and P.K. Thapliyal
(*Geophysical Research Letter*, in Press)
- Comparison of TRMM Observations of Monthly Rainfall with Surface Measurements over Indian Subdivisions
Falguni Patadia, C.M.Kishtawal, P.K.Pal and P.C.Joshi
(Communicated to *International Journal of Climatology*)
- Use of Satellite Microwave Sensors in Qualitative Evaluation of Surface Level Moisture Influx and Study of its Impact on the Intensification of Indian Ocean Tropical Cyclones

C.M.Kishtawal, Sujit Basu, **Falguni Patadia** and P.K. Thapliyal
(Paper under Preparation)

References:

Dr C.MKishtawal, Scientist SF, MOG/RESIPA, Space Applications Centre, ISRO Ahmedabad, Gujarat 380015 India, Tel: +91-079-6916108 (Off.), +91-079-68607151(R),
E-mail: cmk307@rediffmail.com

Dr.P.C.Joshi, Head ASD, MOG/RESIPA, Space Applications Centre, ISRO Ahmedabad, Gujarat 380015, India, Tel: +91-079-6916103 (O), +91-079-6862437(R).
Email: pcjoshi35@yahoo.com.

Dr. M.S Narayanan, Group Director MOG/RESIPA, Space Applications Centre, ISRO Ahmedabad, Gujarat 380015, India, Tel: +91-079-6916102 (O), +91-079-6860322(R).
Email: soumya15_2000@yahoo.com.

Dr.Shyamlal, Chairman, Space and Atmospheric Science Division, Physical Research Laboratory, Ahmedabad, India, Tel: +91-79-6302129 (O), Fax : +91-79-6301502 ,Email: shyamlal@prl.ernet.in

Dr. A. Jayaraman, Space and Atmospheric Science Division, Physical Research Laboratory, Ahmedabad, India, Tel: +91-79-6302129 (O), Fax : +91-79-6301502, Email: jayaraman@prl.ernet.in

Prof. K.P. Maheswari, School of Physics, Devi Ahilya University, Indore, India

Prof. A.K. Dutta, Head, School of Physics, Devi Ahilya University, Indore, India

Personal Details:

Date of Birth : November 08, 1975

Nationality : Indian

Language Known : English, Hindi, Gujarati, Telugu, Oriya, Bengali

Ahmedabad, India
November 15, 2003

(Falguni Patadia)