

Name: Dr. Rupesh M. Das

Designation:	Principal Scientist	
DP No. and Name:	3.01 Atmospheric Science & Metrology	
DU No. and Name:	3/Environmental Sciences & Biomedical Metrology	
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Date of Joining CSIR-NPL:	01/01/2009	
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Research Area/ Interest

1. Impact of changing near-earth space environment system on Earth's upper atmosphere especially over polar region
2. Environment Metrology: Testing, Calibration & Certification of Air Monitoring Systems (AMS)

Educational Qualifications

Degree	Subject	University/ Institute	Year
Ph. D.	Physical Sciences (Electronics)	Barkatullah University, Bhopal	2011
M. Sc.	Electronics (Specialization in Instrumentation)	Nagpur University	2001
B. Sc.	Physics, Electronics & Maths	Nagpur University	1999

Academic / Research Experience

Grade / Post	Institute	Duration		Research Field
		From	To	
Contributory Lecturer	Kamla Nehru Mahavidyalaya, Nagpur	August 2001	March 2002	Courses assigned: Communication & Digital Electronics
Contributory Lecturer	Department of Electronics & Computer Sciences, Nagpur University, Nagpur	August 2002	September 2003	Courses assigned: Communication & Digital Electronics
Research Intern	CSIR-National Physical Laboratory, New Delhi	September 2003	August 2005	Multi-instrument monitoring of media (Ionosphere and troposphere) to improve prediction-for Aerospace and GPS Applications
Project Assistant (Level-II)	CSIR-National Physical Laboratory, New Delhi	September 2005	March 2007	Coherent Radio Experiment (CRABEX) for Tomographic studies of the Ionosphere (GSAT-II Satellite)
Project-SRF	CSIR-National Physical	April 2007	September	RPA Aeronomy

	Laboratory, New Delhi		2007	Payload on SROSS-C2 Data analysis
Project-SRF	CSIR-National Physical Laboratory, New Delhi	October 2007	March 2008	Coherent Radio Experiment (CRABEX) for Tomographic studies of the Ionosphere (GSAT-II Satellite)
CSIR-SRF	CSIR-National Physical Laboratory, New Delhi	April 2008	December 2008	Member of 28th Indian Scientific Expedition to Antarctica and taken lead to establish a Permanent Ionospheric Monitoring Observatory
Scientist	CSIR-National Physical Laboratory, New Delhi	January 2009	December 2012	Investigation of polar region ionosphere under CAWSES India phase II program
Senior Scientist	CSIR-National Physical Laboratory, New Delhi	January 2013	December 2016	Impact of changing near-earth space environment system on earth's upper atmosphere especially over polar region & Establishment of Testing, Calibration & Certification facility for Air Monitoring Systems (AMS)
Principal Scientist	CSIR-National Physical Laboratory, New Delhi	January 2017	Till date	Investigation of Polar Upper Atmosphere & Establishment of Testing, Calibration & Certification facility for Air Monitoring Systems (AMS)

No. of Publications

No. of Publications in SCI Journals	No. of Publications in non-SCI Journals	No. of Publications in Conference Proceedings	Books	Total
24	01	26	04	55

Selected Publications

1) R. S. Dabas, Rupesh M. Das , V. K. Vohra and C. V. Devasia. "Space weather impact on equatorial and low latitude F-region Ionosphere." <u>Annales Geophysicae</u> , 24,97-105,2006.
2) R. S. Dabas, Lakha Singh, S. C. Garg, Rupesh M. Das , Kavita Sharma and V. K.

Vohra. "Growth and decay of a post-sunset equatorial anomaly at low latitudes: control of ExB, neutral winds and daytime electrojet strength." Journal of Atmospheric and Solar-Terrestrial Physics, 68, 1622-1632,2006.

- 3) R. S. Dabas, **Rupesh M. Das**, Kavita Sharma, S. C. Garg, C. V. Devasia, K. S. V. Subbarao, K. Niranjana and P. V. S. Rama Rao. "Study of the Equatorial and Low latitude Spread F Occurrence Characteristics and their Possible Predictions in the Indian zone." Journal of Atmospheric and Solar-Terrestrial Physics, 69, 685-696, 2007.
- 4) H N Dutta, R S. Dabas, **Rupesh M. Das**, Kavita Sharma and Bhupender Singh. "Ionospheric Perturbations over Delhi Caused by the December 26, 2004 SUMATRA Earthquake." International Journal of Remote Sensing,28, 3141-3151,2007.
- 5) R. S. Dabas, **Rupesh M. Das**, Kavita Sharma and K. G. M. Pillai. " Ionospheric precursors observed over low latitudes during some of the recent major earthquakes." Journal of Atmospheric and Solar-Terrestrial Physics, 69, 1813-1824, 2007.
- 6) Kavita Sharma, **Rupesh M. Das**, R. S. Dabas, K. G. M. Pillai, S. C. Garg and A. K. Mishra. "Ionospheric Precursors observed at low latitudes around the Koyana Earthquake." Advances in Space Physics, 42, 1238-1245, 2008.
- 7) R. S. Dabas, Kavita Sharma, **Rupesh M. Das**, N. K. Sethi and S. C. Garg. " Modeling of F-region parameters using a Multi-variant Regression Analysis over Delhi." Journal of Geophysical Research 113, A03306, doi:10.1029/2007JA012539, 2008.
- 8) R.S. Dabas, Kavita Sharma, **Rupesh M. Das**, K.G.M. Pillai, Parvati Chopra and N.K. Sethi "A Prediction of Solar Cycle 24 Using a Modified Precursor Method" Solar Physics, 250,171-181, 2008.
- 9) Kavita Sharma, R. S. Dabas, S. K. Sarkar, **R. M. Das**, Sudha Ravindran, and A. K. Gwal. "Anomalous enhancement of ionospheric F2 layer critical frequency and total electron content over low latitudes before three recent major earthquakes in China" Journal of Geophysical Research, VOL. 115, A11313, doi:10.1029/2009JA014842, 2010
- 10) P. Subrahmanyam, A. R. Jain, H. K. Maini, M. Bahl, **R. M. Das**, S. C. Garg, and K. Niranjana "Evaluation of the ion-density measurements by the Indian satellite SROSS-C2" Radio Science, 45, RS6009, doi:10.1029/2010RS004356, 2010.
- 11) Sneha Yadav, **Rupesh M. Das**, R. Dabas, P. Subrahmanyam, and A. K. Gwal "Response of low latitude ionosphere of the Indian region during the super geomagnetic storm of March 31, 2001" Journal of Geophysical Research, Vol. 116, A08311 doi:10.1029/2010JA016373, 2011. (Selected as best top three publication of the year in the field of space physics by AGU)
- 12) Sneha Yadav, A.K. Upadhyaya and **Rupesh M. Das** "Daytime additional F layer stratification over low-midlatitude station of the Indian sector under geomagnetic disturbed conditions" Journal of Geophysical Research, Vol. 117, doi:10.1029/2011JA017305, 2012.
- 13) Sneha Yadav, **Rupesh M. Das**, R.S. Dabas, A.K. Gwal "The response of sporadic E-layer to the total solar eclipse of July 22, 2009 over the equatorial ionization anomaly region of the Indian zone" Advances in Space Physics, Vol. 51, Issue 11, Pages

2043-2047, 2013.

14) Arun Kumar Singh, Shailendra Saini and **Rupesh M. Das**, “*Impact of geomagnetic variation over sub-auroral ionospheric region during high solar activity year 2014*”, *Advances in Space Research: DOI:10.1016/j.asr.2019.01.050*, 2019.

15) Arun Kumar Singh, Sampad Kumar Panda and **Rupesh M. Das**, “*Comparison of polar ionospheric behavior at Arctic and Antarctic regions for improved satellite-based positioning*”, *Journal of Applied Geodesy: https://doi.org/10.1515/jag-2021-0033*, June 15, 2021.

Current Activities

1. **Principal Investigator** of the project entitled “Establishment of type testing, calibration & certification facility for Online Continuous Emission Monitoring Systems (OCEMS)” & “Continuous Ambient Air Quality Monitoring System (CAAQMS)”, **Funded by Ministry of Environment, Forest & Climate Change, Govt. of India**
2. **Principal Investigator** (CSIR-NPL) of Polar region Ionospheric studies with especial emphasis on Space weather impact, **funded by CSIR**
3. **Co-PI:** Study of Impact of Exposure to Ultra Violet Radiation (UVR) & Aerosol exposure on ocular Health in India (Phase-II). **Funded by Indian Council of Medical Research (ICMR)**
4. Working on scientific problems related to the coupling process of Sun-Earth climate system and its impact on Polar & Indian region upper atmosphere. This helps in refinement of existing ionospheric models which are essential for trans-ionospheric and satellite-based communication and maritime applications.

Honour(s)/Award(s)/ Fellowship(s)

1. CSIR-Senior Research Fellowship (2008-2009)
2. 1st Leader/ Station Commander of 3rd Indian Permanent Research Base “Bharati” during 2012-2013 (31st Indian scientific expedition to Antarctica)

Contributions to AcSIR

1. Course Coordinator: **AcSIR-32-ES-AD-003:Instrumentation for Calibration & Testing**
2. Examiner for comprehensive
3. DAC member of Ph. D. students
4. Ph. D. students guided:
 - i) **Awarded:** 01
 - ii) **In progress:** 05

Membership of Professional Societies/ Institutions

- i) Chairman, technical committee for operation & maintenance of 3rd Indian Research Base “Bharati”
- ii) Member, LITD-12 (Bureau of Indian Standards) “Transmitting Equipment for Radio Communication Sectional Committee.”
- iii) Convener, BIS LITD 12/ Panel 1 Non-ionizing radiation hazards committee
- iv) Member, Environmental Services Sectional Committee, SSD 07

- v) Member, Committee constituted by CPCB for “Development of Network for Air Quality Monitoring”.
- vi) Member, selection committee for Antarctic scientific expeditions
- vii) Member, expert committee (D.lit/D. Sc.) in the subject of Electronics, constituted by VC, Nagpur University
- viii) Founder member, Asia Oceanic Space Weather Alliance (AOSWA)
- ix) Member, International Union of Radio Sciences (URSI)-Commission G
- x) Life Member, Indian Regional Radio Science Society

Any other Information

The work related to investigation of polar region upper atmosphere posed CSIR-NPL as one of the leading institute in this field and also become the part of the consortium created by Ministry of Earth Sciences, Govt. of India. The major objective of this consortium of the institutes is to address the scientific issues defined by International Scientific Committee on Antarctic Research (SCAR) under the code of SCAR-72 under the theme entitled “**How does space weather influence the polar ionosphere and what are the wider implications for the global atmosphere?**” & “**How will the polar space-atmosphere-interaction region (SAIR) change due to global climate change, and what is the impact of those changes on the lower atmosphere?**” The objective of the programme is to exchange the data, knowledge, and technical competence between the countries involved in polar research activities for societal benefits.