

CARICULUM VIATA

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Professor of Physics

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Date of Birth : 30th August, 1966.

Marital Status : Married

Nationality : Indian

EDUCATIONAL QUALIFICATIONS:

<i>S. No.</i>	<i>Degree</i>	<i>University</i>	<i>Year</i>	<i>Division</i>	<i>Subjects</i>
1.	B.Sc. (Hons.)	Banaras Hindu University, Varanasi	1987	Ist	Physics (H), Maths, Geography, English
2.	M.Sc.	Banaras Hindu University, Varanasi	1989	Ist	Physics (Electronics)
3.	Ph.D.	Banaras Hindu University, Varanasi	1993		Space Physics

Research Experience : Total **30** Years

Number of Ph. D. Produced: 12, (Registered: 05)

Research Publications : **238** (Reviews: 7, Journals: 175, Book Chapter: 15, Conference Proceedings: 41)

Conferences/Seminars/Workshop Attended: More than **77**

Supervised Dissertation at Master's Level: More than **45**

Sponsored Research Project: 16 (Completed: 13, Ongoing: 3) more than **3 Crores**

Organised Conference/Seminar/Session/Workshop: 8

Teaching Experience : Total **25** years.

- **Lecturer**, Department of Physics, Priyadarshani College of Engg. & Technology, Nagpur from August, 1994 to May, 1995.
- **Lecturer**, Department of Physics, Maharaja College, V.K.S. University, Ara from November 6, 1996 to November 5, 2000.
- **Senior Lecturer**, Department of Physics, Maharaja College, V.K.S. University, Ara from November 6, 2000 to October 30, 2005.
- **Reader**, Department of Physics, Banaras Hindu University, Varanasi from October 31, 2005 to October 30, 2008.
- **Associate Professor**, Department of Physics, B.H.U., Varanasi from October 31, 2008 to October 30, 2011.
- **Professor**, Department of Physics, B.H.U., Varanasi continued from October 30, 2011.

PROFESSIONAL TRAINING:

1. **P.G. Diploma** in Computer Science, SDCM, Varanasi, 1991.
2. Short term course on Familiarisation and usage of PC, BHU, Varanasi, 1995.
3. Short term course on Computer concepts and FORTRAN-77, BHU, Varanasi.
4. 2nd Coordinated Data Analysis **Workshop** of S.S. Network, B.H.U., 1992.
5. **EISCAT Workshop**, Uppsala, Sweden, 2003.
6. **ESA Space Weather Workshop**, EISTEC, The Netherlands, 2002.
7. 21st **Orientation Course** in science stream, BHU, Varanasi, 1998.
8. 10th **Refresher course** in Physics, BHU, Varanasi, 2000.
9. 3rd **Refresher course** in Environmental Science, BHU, Varanasi, 2005.
10. **Workshop** on Future of Ionospheric Research, ICTP, Trieste, **Italy** 3 - 15 Dec, 2006.
11. 3rd Short Term Course for Academic Administrators, Jan 4 -9, 2010.
12. **SERC School** on Plasma Science, Rajasthan Univ., Jaipur, 1-20 June, 1991.
13. **SERC School** on Solar Terrestrial Environment: Space Weather, BHU, Varanasi, 1-20 September, 2003.

SCHOLARSHIP/FELLOWSHIP:

1. Senior Tech. Asst. in DST project from October 1989 - February 1993.
2. Senior Research Fellowship (CSIR) from March 1993 - June 1994.
3. Research Associateship (CSIR) from July 1994 – November 1996.
4. BOYSCAST Fellowship (DST, Govt. of India) from August 2002 – July 2003.
5. DST-ICTP Fellowship, Trieste, Italy, 3 December, 2006 to 15 December, 2006.

PROFESSIONAL MEMBERSHIP:

1. Life Member, Plasma Science Society of India (PSSI), Ahmedabad (LM-220).
2. Life Member, Indian Physics Association (LM-12777).
3. Life Member, Indian Meteorological Society, New Delhi (LM-1722).
4. Life Member, Indian Aerosol Science & Technology Association (IASTA), BARC, Bombay (F-12433).
5. Fellow Member, The Society of Earth Scientists (SES), Lucknow (F-315).
6. Member, Editorial Board, ISST Journal of Applied Physics, Ghaziabad, India.

AWARDS:

- (i) **Young Scientist Award**, Bihar Council of Science and Technology, Patna.
- (ii) **BOYSCAST Fellowship** from Department of Science and Technology, Govt. of India for 12 months to carryout Advance research in Department of Theoretical Space Physics in Umea University, Umea, **Sweden**.
- (iii) **DST-ICTP Fellowship** to attend Workshop on Future of Ionospheric Research at ICTP, Trieste, **Italy** from 3 December, 2006 to 15 December, 2006.

FIELD OF RESEARCH:

Space Physics and Atmospheric Physics

- Space Plasma Physics, Ionospheric, Magnetospheric, Solar-Terrestrial Physics, Electronics and Radio Physics.
- Space Weather Study of Upper Atmosphere.
- GPS based Total Electron Content (TEC) & Water Vapor content measurements.
- Probing of Ionosphere/Magnetosphere by VLF Whistler mode waves, VHF/UHF Waves.
- Study of Ionospheric Irregularities using VHF & GPS scintillations.
- Generation and propagation mechanism of VLF/VHF electromagnetic wave through plasma & plasma instabilities.
- Atmospheric studies involving Aerosols, dust storms, winter fog, and their radiative and climate effects.
- Study of Ionospheric perturbations associated with Earthquakes.

Innovative Teaching/Designing of New Courses:

1. **Designed and started a New Specialization in Space Physics** in M.Sc. Final Classes having three new Special papers: MPS-301 (F): Solar Physics & Astrophysics, MPS-401 (F): Atmospheric Physics, MPS-402 (F): Instrumentation in Space Physics and **Two New Posts of Associate Professor & Assistant Professor** in Space Physics funded by ISRO.
2. **Set up a new M.Sc. Space Physics Laboratory** with 12 new Experiments in M.Sc. Classes of Semester III and IV.
3. **Designed and started Two Elective Papers** in M.Sc. classes: MPE-301: Plasma Physics & Space Physics. MPE-404: Satellite Communication & Remote Sensing.
4. **Designed and started two New Ph.D. based course work papers:** Computational Electronics-I & II.
5. **Designed & improved syllabus of various B.Sc. and M.Sc courses/papers:** MPE-301, MPE-404, MPC-201, MPS-301 (F), MPS-401(F)

VISITS ABROAD:

1. Visited **12** months in Department of Theoretical Space Physics, Umea University, Umea, **Sweden** as BOYSCAST fellow to carryout Advance Research from August 2002 – July 2003.
2. Visited EISTEC, **The Neatherlands**, in Dec., 2002 to attend ESA Space Weather Workshop.
3. Visited ICTP, Trieste, **Italy** from 3 December, 2006 to 15 December, 2006 to attend Workshop on Future of Ionospheric Research.
4. Visited Sopron, **Hungary** from 23-30 August, 2009 to attend **IGA-2009**.
5. Visited New Orleans, Louisiana, **USA** from 10-22 December, 2017 to attend American Geophysical Union (**AGU**) Fall Meeting-2017.
6. Visited Pasadena, California, **USA** from 14-22 July, 2018 to attend **COSPAR-2018**.

COMPUTATION EXPERIENCE: More than **22** years.

- One year Post Graduate Diploma in Computer Science and Applications from SDCM, Varanasi.
- Two short term addition training in Programming in FORTRAN-77 and uses of PC from Computer Center, Banaras Hindu University, Varanasi.
- Experience in computer programming in various Scientific Languages as FORTRAN, BASIC, C and Matlab.
- Experience in operating the DOS, WINDOW, and UNIX operating systems.
- Experience in using the various scientific packages as Microsoft Office, Emacs, Chi-writer, Harward graphics, Gnuplot, LINUX, etc.
- Experience in using various analysis software as REVAN, etc

ADMINISTRATIVE EXPERIENCE:

1. **Coordinator, ISRO-SSPS** Program of Space Physics to BHU, Varanasi from 2008-2019.
2. **President**, Indian Physics Association (IPA), Varanasi Chapter from 2018-2020.
3. **External Member**, Board of Studies, R.M.L. Awadh University, Ayodhya from 2018-present.
4. **Secretary**, Departmental Research Committee (**DRC**), Physics Department, BHU, Varanasi from August, 2014 onwards.
5. **Assistant Superintendent of Examinations**, Science Faculty, Banaras Hindu University, Varanasi from 2005-2006.
6. **Incharge**, Space Physics Section, Physics Department, BHU from 2009 onwards.
7. **Chairman**, Annual Report Committee, Institute of Science, Banaras Hindu University, Varanasi from 2019-2020.
8. **Time Table Incharge**, Department of Physics, Banaras Hindu University, Varanasi from 2005-2007.
9. **Venue Coordinator**, Mahamana Hall, Institute of Science, Inter faculty youth festival, **SPANDAN-2018**.
10. **Member, Time Table committee**, Department of Physics, Banaras Hindu University, Varanasi from 2007-2011.
11. **Member, Training & Placement Cell**, Science Faculty, Banaras Hindu University, Varanasi from 2010-2013.
12. **Member, Anti-Ragging Committee**, Science Faculty, Banaras Hindu University, Varanasi from 2008-2012.
13. **Member**, Annual Report Committee, Institute of Science, Banaras Hindu University, Varanasi from 2018-2019.
14. **Member**, Internal Quality Assessment Council (**IQAC**), Department of Physics, Banaras Hindu University, Varanasi from 2010-2011.
15. **Member**, Panel of **Deans' Nominees** for Project Purchase Committee related to the Limited Tender Committees and Selection committees and others from 21 December, 2017 onwards.
16. **Member, Admission Committee** for M.Sc. Students in the Department of Physics, Banaras Hindu University, Varanasi from 2008 onwards.
17. **Member, Verification Committee** of Undergraduate Admission Committee, Science Faculty, Banaras Hindu University, Varanasi for 2009 onwards..

18. Member, **Scrutiny Committee** of Undergraduate Admission Faculty of Science, BHU, Varanasi for session 2010-11.
19. **Executive Member**, Indian Meteorological Society (IMS), Varanasi Chapter from, 2016-2020.
20. Member, Convocation Procession Committee, Science Faculty, Banaras Hindu University, Varanasi from 2009-2011.
21. Member, **Library Committee**, Department of Physics, Banaras Hindu University, Varanasi from 2012 onwards.
22. **Observer**, BHU School Entrance Test Exam. SET-2009-14.
23. **Coordinator**, MCA Semester II 2007-10 Exam of V.K.S. University, Ara.
24. **Polling Officer**, Student Council Election for M.Sc. & Ph.D. Course, Physics Department, 2011-12.
25. Member, Committee for organizing special lectures & seminars at Science Faculty to commemorate 150th Birth Anniversary of Mahamana Pt. Madan Mohan Malviya, 2010-11.
26. Member, Organization Committee for Orientation Program of undergraduate students of Science Faculty, 2010-11.
27. Member, Gown Committee for Degree Distribution, BHU Convocation, 2009-14.
28. Member, **Survey Committee** of University Science Instrum. Centre (USIC) level-II.
29. Member, Hydrogen Energy Committee, Hydrogen Energy Centre, Science Faculty.

ORGANISED CONFERENCE/SEMINAR/WORKSHOP/SCHOOLS:

1. **Convener, 3rd One day conference on New Trends in Physics**, Department of Physics, BHU, Varanasi March 30, 2010.
2. **Convener, Workshop on Recent Trends in Space Physics**, Atmospheric Physics & Astrophysics (WRTSPAA-2012), BHU, Varanasi 12-17 March, 2012.
3. **Convener** of session ST-14, a Full Parallel session in **International Seventh Annual Meeting of Asia Oceania Geosciences Society (AOGS-2010)** 5-9 July, 2010 at Hyderabad.
4. **Course Coordinator, 1st Refresher Course in Physical Sciences**, Academic Staff College, BHU, Varanasi.
5. **Member** of Organizing Committee of **Symposium on Recent Trends in Biophysics**, Feb. 13-15, 2010, Department of Physics, BHU, Varanasi.
6. **Dy-Organiser** of session: C5.1, a Full Parallel session in **International 39th COSPAR Scientific Assembly, INFOSYS**, Mysore, 14-22 July, 2012.
7. **Co-Convener**, Conference of **Indian Aerosol Science & Technology Association (IASTA-2014)**, BHU, Varanasi, November, 11-13, 2014.
8. **Member**, Organizing committee of **Recent Developments in Cosmology**, Department of Physics, BHU, Varanasi, 6-8 April, 2018.
9. **Course Coordinator, Winter School in Basic Sciences**, UGC-Human Resource Development Centre, BHU, Varanasi, February 26 - March 18, 2019.

INSTRUMENTS/FACILITIES ESTABLISHED:

Established an “**Atmospheric Research Laboratory**” in Department of Physics, Banaras Hindu University, Varanasi with the following instruments/facilities funded from ISRO, DST, UGC, MoES:

- Automatic Whistler Detector (AWD): a VLF data recording and analysis system from Etovas University, Budapest, Hungary.
- VHF Scintillation recording system and Yagi Antenna as part of ACPITS Program.
- Two GPS Receivers: Trimble 7400 and GSV4004B and Antenna, USA.
- L-Band scintillation recording and analysis system ICOM Receiver, USA.
- VLF AWASOME receiver, Stanford Univ. USA.
- SoftPAL VLF receiver, Dunedin, New Zealand.
- LIDAR for Atmospheric Measurements & Probing (LAMP) developed by ISRO.
- Aerosol Spectrometer, GRIMM, Germany.
- A pair of MICROTOS-II Sunphotometer & Ozonometer, Solar Light, USA.
- Automatic Weather Station (AWS), ISRO, Bangalore.
- High Volume air Samplers for PM10 and PM2.5 particles.
- NET Radiometer.
- Solar telescope along with CCD Camera & Spectrometer.

NATIONAL & INTERNATIONAL COLLABORATIONS:

Various national and international collaborations have been developed with following Institutes/Universities:

- NASA Langley Research Center, USA.
- Department of Theoretical Space Physics, Umea University, Umea, Sweden.
- VLF Laboratory, Stanford University, Stanford, USA.
- Chapman University, USA.
- Department of Geophysics & Space Sciences, Etovas University, Budapest, Hungary.
- School of Engineering and Physics, The University of the South Pacific, Suva, Fiji.
- Indian Institute of Geomagnetism, Mumbai.
- Dr. KSK Geomagnetic Research Laboratory, IIG, Allahabad.
- Indian Institute of Tropical Meteorology, Pune.
- Department of Physics, Andhra University, Visakhapatnam.
- Department of Physics, Lucknow University, Lucknow.
- Aryabhata Research Institute of Observational Sciences, Nainital.
- V. K. S. University, Ara.
- Physics Department, National Institute of Technology, Srinagar, J & K.

SPONSERED RESEARCH PROJECTS: 16 (more than 3 Crores)

Completed Projects: 13

1. “Low latitude Whistlers and related Ionospheric Irregularities”, **DST**, New Delhi, as STA from 1989-1992.
2. “Study of Ionospheric/Magnetospheric Irregularities using VLF Whistler mode waves & VHF Scintillations”, as SRF, **CSIR**, New Delhi from 1993-1994.

3. "Study of Upper Atmospheric plasma by VLF/VHF Electromagnetic Waves at low latitude", **CSIR**, New Delhi, as RA from 1994-1996.
4. "Probing of Upper Atmosphere using Whistler Mode Waves & Ionospheric Scintillations at low latitudes", **DST**, New Delhi, as **BOYSCAST Fellow**, from 2002-2003.
5. "Space Climatology of Upper Atmosphere using VHF Scintillations and VLF Whistler-Mode Waves" funded by **ISRO**, Bangalore under CAWSES Program from 2007-2010. Total amount sanctioned Rs. 4.60 lakhs.
6. "Running/Maintenance Cost of GPS Measurements at the Rajiv Gandhi South Campus, B.H.U., Barkachha" funded by **MoES**, New Delhi from 2007-2012. Total amount Rs. 18.5 lakhs.
7. "Space Weather Studies of Upper Atmosphere using VHF scintillations and VLF whistler mode waves", funded by **UGC**, New Delhi from 2007-2010. Total amount sanctioned Rs. 4.10 lakhs.
8. "Role of Space Weather Events on VHF scintillations and VLF Waves" funded by **DST**, New Delhi from 2006-2009. Total amount sanctioned Rs. 16.8 lakhs.
9. "Solar Eclipse time ionospheric/magnetospheric studies using VLF, VHF & UHF waves", funded by **ISRO**, Bangalore from 2009-2010. Total amount sanctioned Rs. 2.0 lakhs.
10. "GPS based TEC measurements and ionospheric perturbations due to Earthquakes" funded by **DST**, New Delhi from 2008-2012. Total amount sanctioned Rs. 27.6 lakhs.
11. "Coordinated Study of VLF Waves in India: "Remote Sensing of Ionosphere and Magnetosphere using ELF/VLF Waves at Low Latitudes" under CAWSES-India Phase-II from 2010-2013. Total amount sanctioned Rs. 13.3 lakhs.
12. "Ionospheric / Magnetospheric Electromagnetic Phenomena using Ground based VLF Waves Observations" from 2009-2015 in collaboration with **I.I.G.** Mumbai, and Stanford University, USA.
13. "Physical and Chemical Properties of Atmospheric Aerosols in Indo-Gangetic Basin" funded by **UGC**, New Delhi from 2016-2019. Total amount sanctioned Rs. 13.98 lakhs.

Ongoing Projects: 3

14. "Space Science Activities at Indian Universities (BHU, Varanasi)" under **ISRO-SSPS** Program" funded from **ISRO**, Bangalore from 2009-2021. Total Amount sanctioned Rs. 233 lakhs.
15. "Long-Term Analysis of Aerosols and Related Aerosol Radiative Forcing in Ganga Basin at B.H.U. Campus, Varanasi" under **ISRO-ARFI** program funded from **ISRO**, Bangalore from 2009-2019. Total amount sanctioned Rs. 35 lakhs.
16. "Space Weather Studies of Ionosphere using Multi-frequency GNSS Based TEC and Scintillations Measurements" funded by **SERB**, New Delhi from 2019-2022. Total amount sanctioned Rs. 42 lakhs.

PH. D. THESIS SUPERVISED: 15 (Ph.D. Awarded: 10, Currently Supervising: 5)

Name	Title of Ph.D. Thesis	Year of Award
1. Shubha Singh	Electromagnetic waves in inhomogeneous	2009

magnetoplasma: An application to magnetosphere.

2. Kalpana Patel	Study of Ionospheric Irregularities at low latitudes	2010
3. S. B. Singh	Probing of Upper atmosphere using VLF & VHF Electromagnetic waves	2010
4. Sanjay Kumar	Effect of Solar & Geomagnetic activity on ionospheric TEC & Variability of Tropospheric water vapor using GPS-based measurements	2011
5. Surendra Prasad	Study of Electromagnetic Wave Propagation in One Dimensional Plasma Photonic Crystals	2012
6. Ashutosh K. Singh	Study of Ionospheric Perturbations Using Very Low Frequency (VLF) Waves	2013
7. Sarvan Kumar	Aerosol Characteristics, Dynamics and Climatic implications over Indo-Gangetic Basin.	2015
8. Shani Tiwari	Atmospheric Aerosol Properties and it's Climate Impact in Indo-Gangetic Basin	2016
9. Vishnu S. Rathore	Study of the Effect of Space Weather Events on Earth's Ionosphere over Low Latitude	2018
10. Richa Rai	Assessment of Potassium Bromide thin film photocathodes for Vacuum Ultraviolet sensitive devices	2018
11. Geetika Sonkar	Modeling the Influence of Atmospheric Aerosols on Crop Production in Indo-Gangetic Basin	2019
12. Abha Singh	Study of Space weather Effects on Upper Atmosphere	2020

SUPERVISED DISSERTATION AT MASTER'S LEVEL: Total : 45

1. Study of Ionospheric Irregularities using VHF scintillations.
2. Variation of Atmospheric Ozone over Indian region.
3. GPS based total electron content of ionosphere and its variability.
4. Study of Aerosols in Indo-Gangetic plain and its variability.
5. Measurement of ionospheric perturbation due to earthquake by using GPS based TEC.
6. Variability of Aerosols in Indo-Gangetic Basin.
7. Remote Sensing the D-layer of ionosphere using VLF Waves.
8. Variability of Water Vapor over Indo-Gangetic basin using Ground and Satellite Measurements.
9. Study of Space Weather Effects on Ionosphere using GPS based TEC measurements.

10. Variability of Aerosols and its effect on Environment and Human Health.
11. Global Positioning System (GPS) based study of Ionospheric TEC variation & Scintillation.
12. Remote Sensing of Atmospheric Aerosols & Water Vapor over Jaipur during 2010.
13. Remote Sensing of Ionosphere by using VLF Transmitter Signal during Solar Flares.
14. Characteristics of Atmospheric Aerosol Parameters during Major Dust Storms over Indo-Gangetic basin.
15. Characteristics of Ionospheric Plasma Bubbles observed over Varanasi using GPS based measurements.
16. Variability of AOT over Indo-Gangetic basin during the year 2011.
17. Effect of solar Flare on D-region of Ionosphere using VLF transmitter signal.
18. The study of Aerosols over Indo-Gangetic Basin during 2011-12 by using Remote Sensing.
19. Effects of Space Weather Events on the Upper Atmosphere using VLF Waves.
20. Characteristics of Atmospheric Aerosols over Varanasi during 2011-12.
21. Characteristics of Ionospheric Irregularities over Varanasi using GPS Scintillations
22. Physical and Optical Properties of Atmospheric Aerosols over Indo-Gangetic Basin using Satellite and Ground based Measurements during 2009-2013.
23. Study of Space Weather effects on Upper Atmosphere using GPS based measurements.
24. Optical and Chemical properties of Atmospheric Aerosols over Gangetic Regions.
25. Characteristics of Whistlers observed at Low Latitude using Automatic Whistler Detector.
26. Effects of Aerosols and Trace gases on Normalized Vegetation Index (NDVI) over Indo-Gangetic Basin.
27. Optical and Physical properties of Aerosols during major Dust Storm events over Indo-Gangetic Basin.
28. Prediction of Intense Geomagnetic Storms using Artificial Neural Network.
29. Characteristics of Ionospheric Irregularities over low latitude using GPS based measurements.
30. Effect of Relative Humidity on the Growth of aerosol Particles.
31. Probing of Ionospheric and Magnetospheric plasma parameters using Automatic Whistler Detector (AWD).
32. Study of effect of Space Weather events on Ionosphere using GPS based measurements.
33. Aerosol characteristics over Indo-Gangetic Basin.
34. Variability of Ionospheric Total Electron Contents using GPS based measurements over Varanasi.
35. Study of Physical and Optical Properties of Aerosol over Indo-Gangetic Basin.
36. Remote Sensing of upper atmosphere using Very Low Frequency Whistler-mode waves recorded at Low Latitude Varanasi.
37. Variability of Atmospheric Aerosol over Indo-Gangetic Basin using Ground and Satellite Based Measurements.
38. Study of Different Solar Parameters Using Refractor Telescope.
39. Changes in Aerosol Optical Properties during Major Dust Storms during 2018 over the Indo-Gangetic basin.
40. Chemical characterization of atmospheric particulate matter PM_{10} and $PM_{2.5}$ over Varanasi.
41. Response of low latitude ionosphere during intense geomagnetic storms using GPS based measurements.

42. Optical and Physical Properties of Aerosols over Indo-Gangetic Basin Using Ground and Satellite Based Measurements.
43. Ionospheric profiling using FERMOSAT-3 and COSMIC satellites and its validation with IRI model.
44. Study of Seismo-Ionospheric precursor using GPS measurement.
45. Characteristics of Atmospheric and Meteorological parameters during Cyclone Fani.

Editor/Reviewer of Journals:

1. **Editor**, Indian Journal of Radio & Space Physics (IJRSP), **NISCAIR**, New Delhi.
2. **Editor**, ISST Journal of Applied Physics, Ghaziabad, India.
3. Reviewer, J. Atmospheric, Solar & Terrestrial Physics, **Elsevier** Publication.
4. Reviewer, Atmospheric Environment, **Elsevier** Publication.
5. Reviewer, Radio Science, American Geophysical Union, **USA**.
6. Reviewer, Environmental Science and Pollution Research, **Springer** Pub.
7. Reviewer, Canadian Journal of Physics, **Canada**.
8. Reviewer, Gematic, Natural Hazard and Risk, Taylor & Francis, **USA**.
9. Reviewer, Ind. J. Radio & Space Physics, NISCOME, India.
10. Reviewer, J. Astrophysics & Space Sciences, **Springer** Publication.
11. Reviewer, Advances in Space Research, **Elsevier** Publication.
12. Reviewer, Int. J. Adv. Earth Sciences, Research Publishing Group.
13. Reviewer, ATMOSFERA, **Canada**.
14. Reviewer, Earth System Sciences, **Springer** Publication.
15. Reviewer, Atmospheric Pollution Research, **Springer** Publication.
16. Reviewer, Earth Science India.
17. Reviewer, Earth Moon & Planets, **Springer** Publication.
18. Reviewer, Indian Journal of Physics, **Springer** Publication.
19. Reviewer, Current Science, India.
20. Reviewer, Earth Science Research, **Canada**.
21. Reviewer, Navgavesana: An International Journal.
22. Reviewer, Acta Geodaetica et Geophysica, **Springer** Pub.
23. Reviewer, Scientific Research and Essays, Academic Journals.
24. Reviewer, J. Astrophysics and Astronomy, **Springer** Pub.
25. Reviewer, Proceedings of the National Academy of Sciences, India Section A: Physical Sciences.

Professional Responsibilities/Activities:

1. **Research Proposal Evaluator**, Department of Science & Technology (DST), New Delhi.
2. Research Proposal Evaluator, Indian Space Research Organizer (ISRO), Bangalore.
3. **Research Proposal Evaluator**, Ministry of Earth Sciences (MoES), New Delhi.
4. **Reviewer**, Book proposal, John Wiley & Sons, Ltd.
5. Member, LOC, Symposium on Recent Trends in Biophysics, Feb. 13-15, 2010, BHU.
6. Member, LOC, Symposium Recent Advances in Nano-Materials and their Applications, March 7-9, 2009, BHU.

7. **Member, LOC**, International Conference on ‘Perspectives in Vibrational Spectroscopy’, BHU, Feb. 21-24, 2010.
8. Member, LOC, Summer School on Biological Systems, July 19 to August 10, 2011, BHU.
9. Member, Selection Committee for selection of ISRO Fellowships to M.Sc. Students, BHU, 2010-12.
10. **Course Coordinator**, Teaching work of courses: MPE-301, MPE-404, MPC-201, MPS-301 (F), MPS-401(F)

RESEARCH PUBLICATIONS:

I. Reviews:

1. Lightning Discharges, Cosmic Rays and Climate, S. Kumar, D. Siingh, R. P. Singh, **A. K. Singh**, A.K. Kamra, *Surveys in Geophysics*, **39** (5), 861-899, 2018, <https://doi.org/10.1007/s10712-018-9469-z> (IF: **5.544**).
2. Lightning and middle atmospheric discharges in the atmosphere, D. Siingh, R. P. Singh, S. Kumar, T. Dharmaraj, **A. K. Singh**, Ashok K. Singh, M. N. Patil, S. Singh, *J. Atmospheric-Solar & Terrestrial Physics*, **134**, 78-101, 2015 (IF: **1.735**).
3. Discharges in the stratosphere and mesosphere, D. Siingh, R. P. Singh, Ashok, K. Singh, S. Kumar, M N Kulkarni and **A. K. Singh**, *Space Science Review*, **167**, 73- 121, doi:10.1007/s11214-012-9906-0, 2012 (IF: **8.142**)
4. Solar Activity, Lightning and Climate, D. Siingh, R.P. Singh, Ashok. K. Singh, **A. K. Singh**, *Surveys in Geophysics*, **32**, 659–703, 2011 (IF: **5.544**)
5. Thunderstorms/Lightning Generated Sprite and Associated Phenomena, D. Siingh, S. Kumar and **A. K. Singh**, *Earth Science India*, **3 (II)**, 124-145, April, 2010. (Indexed)
6. Thunderstorms, lightning, sprites and magnetospheric whistler-mode radio waves, D. Siingh, **A. K. Singh**, R.P. Patel, R. Singh, R.P. Singh, B. Veenadhari and M. Mukherjee, *Surveys in Geophysics*, **29**, 499-551, 2008. (IF: **5.544**).
7. Lighting/Optical Discharges and Climate: A Brief Review, D. Siingh, S. Kumar, Upal Saha, **A. K. Singh**, R.P. Singh and Ashok K. Singh, *Earth Science India*, **10 (I)**, 13-62, Jan., 2017.

II. Original Research Papers:

8. Analysis of air pollution in the atmosphere due to firecrackers in the Diwali period over an urban Indian region, V. Pratap, Upal Saha, Akhilesh Kumar and **A. K. Singh**, *Advances in Space Research*, 2021 <https://doi.org/10.1016/j.asr.2021.06.031> (IF: **2.152**).

9. A Study on TEC Reduction during the Tail Phase of the 21st June 2020 Annular Solar Eclipse, S. S. Rao, M. Chakraborty, **A. K. Singh**, *Advances in Space Research*, **67** (6), 1948-1957, 2021 DOI: 10.1016/j.asr.2020.12.035 (**IF: 2.152**).
10. Predicting the rapid intensification and dynamics of pre-monsoon extremely severe cyclonic storm 'Fani' (2019) over the Bay of Bengal in a 12-km global model, Vivek Singh, R. T. Kondur, A. K. Srivastava, I. M. Momin, S. Kumar, **A. K. Singh**, S. Tiwari, *Atmospheric Research*, 247, 1 January 2021, 105222. <https://doi.org/10.1016/j.atmosres.2020.105222> (**IF: 5.369**).
11. Effect of intense geomagnetic storms on low latitude TEC during the ascending phase of solar cycle 24, Abha Singh, V. S. Rathore, Sanjay Kumar, S. S. Rao, S. K. Singh, and **A. K. Singh**, *J. of Astrophysics and Astronomy*, 2021 <https://doi.org/10.1007/s12036-021-09774-8> (**IF: 1.273**).
12. COVID-19 lockdown induced air pollution reduction over India: a lesson for future air pollution mitigation strategies, V. Pratap, S. Tiwari, A. Kumar, **A. K. Singh**, *J. Earth System Sciences*, 2021 (**IF: 1.423**).
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203. Study of Aerosol Types and their Optical Properties over Varanasi using Air Mass Back Trajectory, S. Tiwari, A. K. Srivastava and **A. K. Singh**, *IASTA Bulletin*, **21**, 524-527, 2014.
204. Intra-Urban Variability of Atmospheric Aerosols and its Relationship with Optical Properties over a Mega City Delhi, S. Tiwari, A. S. Pipal, A. K. Srivastava, S. Tiwari, **A. K. Singh**, D. S. Bisht, A. K. Pandey, Manoj K. Srivastava, *IASTA Bulletin*, **21**, 727-629, 2014.
205. Regional Behaviour of Atmospheric Aerosols Over Indo-Gangetic Basin during Pre-Monsoon, S. Tiwari and **A. K. Singh**, *AIP Conf. Proc.* 1527, 637-640, 2013.
206. Effect of Geomagnetic Storms on Ionospheric Irregularities Using VHF Scintillations at Low Latitude, **A. K. Singh**, K.K. Singh and S. B. Singh, *Proceeding of Beacon Satellite Symposium*, P. Doherty and M. Hernandez-Pajares (Eds.) Bath, UK, July 8-12, 2013.
207. Study of Ionospheric Irregularities using GPS-based Measurements, Sanjay Kumar, D.V. Phani Kumar and **A. K. Singh**, *Proceeding of Beacon Satellite Symposium*, P. Doherty and M. Hernandez-Pajares (Eds.) Bath, UK, July 8-12, 2013.
208. Magnetospheric Plasma Parameters Deduces From Analysis of Multiple-Whistlers Detected By Automatic Whisler Detector (AWD) At Low Latitude Varanasi, S. B. Singh, Ashutosh Kumar Singh and **A. K. Singh**, *Proceedings of the 27th National Symposium of Plasma Science and Technology (PLASMA-2012)*, 463-466, 2012.
209. Charecteristics of Ionospheric Plasma Bubbles Using GPS Based Measurements at Varanasi, **A. K. Singh**, S. B. Singh and Sanjay Kumar, *Proceedings of the 27th National Symposium of Plasma Science and Technology (PLASMA-2012)*, 467-470, 2012.

210. Behavior of low-latitude ionosphere in terms of total electron content (TEC) during the annular solar eclipse of 15 January, 2010, S. Kumar and **A. K. Singh**, *Proceedings of the National Workshop: Results of Solar Eclipse*, SPL, ISRO, 52-54, 2011.
211. Solar eclipse time ionospheric/magnetospheric studies using VLF, VHF & UHF waves, **A. K. Singh**, Ashutosh K. Singh, S. Kumar, and S.B. Singh, *Proceedings of the National Workshop: Results of Solar Eclipse*, SPL, ISRO, 78-79, 2011.
212. Atmospheric Aerosol Properties Measured at Varanasi located in Indo-Gangetic Basin, S. Tiwari and **A. K. Singh**, *Proceedings of the XXXth URSI General Assembly and Scientific Symposium*, Istanbul, Turkey August 13-20, 2011 IEEE Xplore.
213. Study of equatorial low-latitude ionospheric irregularities during a recent geomagnetic storm of 03 August 2010 using GPS Receiver, S. Kumar and **A. K. Singh**, *Proceedings of the XXXth URSI General Assembly and Scientific Symposium*, Istanbul, Turkey August 13-20, 2011 IEEE Xplore.
214. Phase and Amplitude Perturbations Observed on Subionospheric VLF Signal recorded at Varanasi ($L = 1.07$) Using SoftPAL Receiver, Ashutosh K. Singh and **A. K. Singh** *Proceedings of the XXXth URSI General Assembly and Scientific Symposium*, Istanbul, Turkey August 13-20, 2011 IEEE Xplore.
215. Variation of aerosol optical depth over Indo-Gangetic basin using AERONET, MODIS and MISR, Sarvan Kumar, Sanjay Kumar and **A. K. Singh**, *Proceeding of IASTA-2010*, **19**(1-2), 395-398, March, 2010.
216. Characteristics of ionospheric plasma bubbles observed by DMSP during the year 2005, S. Priyadarshi, S. Kumar and **A. K. Singh**, *Proceeding of Beacon Satellite Symposium*, P. Doherty and M. Hernandez-Pajares (Eds.) CIMNE, Barcelona, June 7-11, 2010.
217. Modelling of ionospheric scintillations at low latitude using insitu data, K. Patel and **A. K. Singh**, *Proceeding of Beacon Satellite Symposium*, P. Doherty and M. Hernandez-Pajares (Eds.) CIMNE, Barcelona, June 7-11, 2010.
218. Study of the ionospheric irregularities by GPS measurements at low latitude station, Varanasi, **A. K. Singh**, *Proceeding of Beacon Satellite Symposium*, P. Doherty and M. Hernandez-Pajares (Eds.) CIMNE, Barcelona, June 7-11, 2010.
219. Different types of Very Low Frequency Emissions (VLF) Observed at Low Latitude Station Varanasi, R.P. Patel, **A. K. Singh**, *Proceed Ist international Conference of Science with VLF Radio Wave: Theory & Observation*, Editor, S.K. Chakrabarti, CP1286, 77-82, 2010.
220. Estimation of D-region Electron Density using Tweeks Measurements at Nainital and Allahabad, P. Pant, R. Singh, B. Veenadhari, **A. K. Singh**, *Proceeding of the Ist*

international Conference of Science with VLF Radio Wave: Theory & Observation, Editor, S.K. Chakrabarti, CP1286, 77-82, 2010.

221. Effects of Dust storms on Aerosol loading over IG-basin, Sarvan Kumar, S. Kumar, **A. K. Singh**, *Proceedings of the ICON-GSECES-2010*, Varanasi, India 21-23 December 2010.
222. Space Weather Studies of Ionospheric Scintillations at Low latitude, **A. K. Singh** and R.P. Singh; *Proc. of ESA Space Weather Workshop*, **The Netherlands**, 2003.
223. Study of Ionospheric Irregularities using Radio Wave Scintillation and EISCAT Observations, **A. K. Singh**; *Proc. of EISCAT workshop*, IRF-Uppsala, **Sweden**, 2003.

IV. Chapters in Books:

224. Aerosol Characteristics and Its Impact on Regional Climate Over Northern India, Pradeep Kumar, Arti Choudhary, Vineet Pratap, Pawan K. Joshi and Abhay Kumar Singh, in the Book "*Air Pollution and Its Complications*", **Springer Pub.**, 2021.
225. Earthquake Hazards and Monitoring of Seismo-ionospheric Precursor, Sanjay Kumar and **A. K. Singh**, in the Book "*Recent Technologies for Disaster Management and Risk Reduction*" (P. K. Rai et al. editors) Earth and Environmental Sciences Library, https://doi.org/10.1007/978-3-030-76116-5_2, **Springer Pub.** 2021.
226. Probing the upper atmosphere using GPS, S. S. Rao and **A. K. Singh**, in the book "*GPS and GNSS Technology in Geosciences*", **Elsevier Pub.**, 2021.
227. Probing the tropospheric water vapor using GPS, S. Kumar, **A. K. Singh** & R. P. Singh, in the book "*GPS and GNSS Technology in Geosciences*", **Elsevier Pub.**, 2021.
228. Characteristics of Atmospheric Aerosol over Indo-Gangetic Basin: Trend, Origin of Sources and Impact on Climate, Pradeep Kumar, Arti Choudhary, P. K. Jos¹ and A. K. Singh, in the Book "*Geo-information Technology for Earth Resources Monitoring and Management*" NOVA SCIENCE PUB. 2021.
229. Monitoring and Assessment of Air Pollution, Shani Tiwari, B. Chen, **A. K. Singh** in: Air Pollution and Environmental Health, Eds. Pallavi Saxena and Anju Srivastava, **Springer Pub.**, Vol 20, 2020.
230. Plasma photonic crystals with inhomogeneous collisional plasma, S. Prasad, V. Singh, and **A. K. Singh**, Novel features and prospective of photonic crystals, *Lap Lambert Academic Publishing*, 202-215, 2012.
231. Long term trends of VLF whistlers and daytime VHF scintillations at low latitude ground station Varanasi, **A. K. Singh**, R.P. Patel, K. Patel and R. P. Singh, *CAWSES-India Report*, Editors K.G. Rao & R. Sridharan, **ISRO Pub.** Bangalore, 248-257, 2009.

232. Global Positioning System (GPS) and its application in Atmospheric studies, **A.K. Singh & Sanjay Kumar**, *Geo-Imaginations*, 21-29, 2011.
233. Equatorial Plasma Instability and its Role in the Generation of Ionospheric Irregularities; **A. K. Singh** and S. B. Singh, *Scope and Challenges in Plasma Science & Technology*, Editor A. K. Singh, *Allied Publishers*, 81-86, 2005.
234. Study of Plasma Irregularities in the Ionosphere; R.P. Patel, A.P. Singh, **A.K. Singh** and R.P. Singh, *Scope and Challenges in Plasma Science & Technology*, Editor A. K. Singh, *Allied Publishers*, 153-158, 2005.
235. ELF Emissions at Low Latitude; D.K. Singh, R.P. Singh and **A.K. Singh**; *Recent Dev. in Atmospheric and Space Sciences*, Editors J. Rai and V. Singh, 1-7, 2001.
236. Probing of Ionospheric Electron Density Irregularity; **A. K. Singh**, D. Narayan and R. P. Singh; *Recent Advances in Plasma Science and Technology*, Editors R.P. Singh S.B. Rai & D. Narayan, *Allied Publishers*, 60-63, 1995.
237. Study of Ionospheric Fluctuations Using Electromagnetic Waves; **A. K. Singh**, Ashok K. Singh and R.P. Singh; *Plasma Science*, Editor P.K. Ghosh, *Prentice-Hall of Ind. Priv. Ltd*, 167-170, 1995.
238. Role of Ionospheric Turbulence on Amplitude Fluctuation of Radio Waves; **A. K. Singh**, Ashok K. Singh, and R.P. Singh; *Plasma Science & Technology*, Editor IML Das, *Allied Publishers*, 215-218, 1993.

CONFERENCES/SEMINARS/WORKSHOP ATTENDED: Total 77

1. 6th National Space Science Symposium (NSSS-90), Nagpur University, Nagpur, January, 1990.
2. 1st AICPITS Group Monitoring Workshop, I.I.T.M., Pune, December 17-19, 1990.
3. 1st SERC School on Plasma Science, Rajasthan University, Jaipur, 1991.
4. 3rd AIPITS Group Monitoring Workshop, I. I. A., Bangalore, February 26-28, 1992.
5. 7th National Space Science Symposium, (NSSS-92), P. R. L., Ahmedabad, March, 1992.
6. 2nd Coordinated Data Analysis Workshop of Satellite Scintillation Network, B.H.U., Varanasi, June 1-6, 1992.
7. Asian Conference on Solid State Ionic, B.H.U., Varanasi, November 12-14, 1992.
8. 8th Symposium on Plasma Science and Technology (Plasma-93), Allahabad University, Allahabad, October 11-14, 1993.

9. National Symposium on Plasma Science, I.I.T. Kanpur, 1994.
10. 10th Symposium on Plasma Science and Technology (Plasma-95), B.H.U., Varanasi, October 16-19, 1995.
11. 21st National Science Congress, Patiala, Punjab, January 3-7, 1996.
12. 11th Symposium on Plasma Science and Technology (Plasma-96), Barakatullah University, Bhopal, October 28-31, 1996.
13. 22nd National Science Congress, Delhi University, New Delhi, January 3-7, 1997.
14. 13th Symposium on Plasma Science and Technology (Plasma-98), Saurashtra University, Rajkot, October 27-30, 1998.
15. 11th National Space Science Symposium (NSSS-2K), Puri, March 1-7, 2000.
16. International Workshop on Sismo-Electromagnetics and Space Science (IWSE-SS 2000), Agra, 19-21 December, 2000.
17. 12th National Space Science Symposium (NSSS-02), Barakatullah University, Bhopal, 2002.
18. ESA Space Weather Workshop, ESTAC, Noordwijk, **The Neatherland**, December 16-18, 2002.
19. EISCAT related Workshop, IRF- Uppsala, **Sweden**, April 24-25, 2003.
20. Vth SERC School on Upper Atmospheric Physics “Solar-Terrestrial Environment-Space Weather”, B.H.U., Varanasi, September 1-20, 2003.
21. National Conference on Radio Science in India (INCURSI-2003), N.P.L., New Delhi, November 27-29, 2003.
22. 19th Symposium on Plasma Science and Technology, (Plasma-2004), Bundelkhand University, Jhansi, 7-10 December, 2004.
23. 14^h National Space Science Symposium (NSSS-06), Andhra University, Visakhapatnam, 9-12, February, 2006.
24. Brainstorming Workshop on AEROSOLE Sciences, I.I.T., Kanpur, 2006.
25. International Workshop on Sismo-Electromagnetics and Space Science (IWSEM-2006), Agra, 20-22 November, 2006.

26. International Workshop on Recent Advances in Ionospheric Research, ICTP, Trieste, Italy, 3-14, December, 2006.
27. National Symposium on Recent Advances in Analytical Sciences and Applications, Himachal University, Shimla, 9-11 April, 2007.
28. Workshop on CAWSES working group, NARL, Gadanki, Tirupati, 21-23 May, 2007.
29. CAWSES-India WG3 meeting at ISRO Headquarters, Bangalore during 8-9 January 2008.
30. 15th National Space Science Symposium (NSSS-08), RAC, NCAR, Ooty, 26-29, February, 2008.
31. 11th **IAGA** Scientific Assembly, August 23-30, 2009 at Sopron, **Hungary**.
32. ISRO's **CAWSES** India program Workshop, NARL, Gadanki, Tirupati, 9-11 July, 2009.
33. Group Monitoring Workshops, 10-12, December 2009, I.I.G., Mumbai.
34. 2nd *one day conf. New Trends in Research*, 17 January 2009, Department of Physics, B.H.U.
35. 24th National Symposium on Plasma Science & Technology (**PLASMA-2009**), 8-10, December, 2009, NIT, Hamirpur, HP.
36. Seventh Annual Meeting of Asia Oceania Geosciences Society (**AOGS-2010**), 5-9 July, 2010, Hyderabad.
37. 3rd One day conference on New Trends in Physics, Department of Physics, BHU March 30, 2010.
38. International Workshop on Spectroscopic Signatures of Molecular Complexes/Ions in our Atmosphere and Beyond, February 2- 4, 2010, BHU, Varanasi.
39. Group Monitoring Workshop meet of Ministry of Earth Sciences, 20-21, January, 2010, Andhra Univ., Visakhapatnam.
40. Symposium on Recent Trends in Biophysics, Feb. 13-15, 2010, BHU, Varanasi.
41. International Workshop on Seismo-Electromagnetics & Atmospheric Science (**IWSE-AS 2010**), 16 – 18 Nov. 2010, Agra.
42. International Conference on Geophysical Sciences – Energy, Climate Change and Evolution of Human Society (**ICON GSECCES-2010**) December-21-23, 2010.
43. Group Monitoring Workshop of Department of Science & Technology (DST), Cochin University, Cochin, 11-12, Jan, 2011.

44. CAWSES Workshop on Space Weather and Space Climate, Physical Research Laboratory (PRL), Ahmedabad, 27-28 April, 2011.
45. Scientific and Technical Vocabulary Committee Meeting, 16-17, February, 2011, BHU, Varanasi.
46. Meeting of Climate Change Programme, DST, New Delhi 12-13 November, 2011.
47. Indo-US Workshop on Advancing VLF Science through the Global AWESOME Network, Goa, 28 Nov-1 Dec, 2011.
48. 4th One day conference on New Trends in Physics, Department of Physics, BHU, 2011.
49. SERC School on Seismo-electromagnetics, Department of Physics, R.B.S. College Bichpuri, Agra, 2012.
50. 2nd International Workshop on Spectroscopic Signatures of Molecular Complexes/Ions in our Atmosphere and Beyond, February 7-10, 2012, BHU, Varanasi.
51. 39th COSPAR Scientific Assembly, INFOSYS, Mysore, 14-22 July, 2012.
52. Sixth Annual Review Meeting on Integrated Agromet Advisory Services, 21-23 November, 2012, BHU, Varanasi.
53. National Symposium on Current Status and New Horizons of Ecological Sciences and Environmental Biotechnology (ESEB-13), BHU, Varanasi, 1-3, March, 2013.
54. National Symposium on Chemistry and Environment (NSCE-2013), BHU, Varanasi, 15-16 March, 2013.
55. Brain Storming Session on *Indian Space Science Initiatives (ISSI)*, University of Calcutta, Kolkata, February 12-13, 2014.
56. National Workshop on “Simulation Modelling and Climate Change: Issues and Challenges”, IESD, BHU, Varanasi, 21st April, 2014.
57. Conference of Indian aerosol Science & Technology Association (**IASTA-2014**), BHU, Varanasi, November 11-13, 2014.
58. Brain Storming Workshop on Collaborative research of electromagnetic precursors of earthquakes using ULF/VLF and GPS-TEC based measurements, R. B. S. Engineering Technical Campus, Bichpuri, Agra, 28-29 November, 2014.

59. First Science Workshop on NEMO-AM (Nanosatellite for Earth Monitoring and Observation-Aerosol Monitoring) at Satellite Application Centre (SAC) Ahmadabad on Tuesday, 28 April, 2015.
60. International Conference on Contemporary Advances of Science & Technology (IC-CAST-2015), at BHU, Varanasi, August 7-9, 2015.
61. International BHU Alumni Meet (**IBAM-2015**) & Seminar on "Science & Religion: Mahamana's Vision", BHU, Varanasi, 23-24 November, 2015.
62. Centenary year One Day Conference on Recent Trends in Physics, BHU, Varanasi on February 20, 2016.
63. National Seminar on Geographies of Varanasi and Environs, BHU, Varanasi on 11-12 March, 2016.
64. Brainstorming meeting on "Climate Change and Way Forward" at BHU, Varanasi on 23rd February, 2017.
65. American Geophysical Union (**AGU**) Fall Meeting-2017, 11-15 December, New Orleans, Louisiana, USA.
66. National Conference on Recent Trends in Space Science and Nano Materials, APS University, Rewa, 26-27 March, 2018.
67. Recent Developments in Cosmology, Department of Physics, BHU, Varanasi, 6-8 April, 2018.
68. 42nd **COSPAR** Scientific Assembly, Pasadena, USA, 14 - 22 July 2018.
69. National Symposium on Understanding Weather and Climate Variability: Research for Society, **TROPMET-18**, October. 24-27, 2018, Varanasi.
70. 84th Annual Meeting of Indian Academy of Science, Bengaluru, at BHU, Varanasi, 2-4 November, 2018.
71. National Conference on Recent Trends in Space Science and Nano Materials, APS University, Rewa, 26-27 March, 2018.
72. URSI Regional Conference on Radio Science (URSI-RCS-2020), IIT-BHU, 12-14, February, 2020.
73. Leadership for Academicians Program (**LEAP**) from 12-23 March, 2020, BHU, Varanasi.
74. "National Conference on Environment and Energy Materials (NCEEM-2020)" Sharda University, New Delhi, 27-28 June, 2020.

75. International Workshop on Joint Modernistic & Innovative Technology, 4-6 August, 2020 at JMIT, Radaur, Haryana.
76. One day Webinar on Space weather: Ionospheric and Technological Impacts, Doon University, Dehradun, 6 October, 2020.
77. CONIAPS XXVI: International Conference on “Advances in Physics” 18-20 December, 2020, Gondwana University, Gadchiroli.
78. Webinar for Ozone for Life, 16 September, 2021 at V.B.S. Purvanchal University, Jaunpur.

INVITED TALK DELIVERED (Recent): 44

1. Characteristic of Ionospheric Plasma Bubbles, 24th National Symposium on Plasma Science & Technology (PLASMA-2009), 8-10, December, 2009, NIT, Hamirpur, HP.
2. Space Weather & its applications, **INSPIRE** Internship Science Camp, ASC, BHU, 16-11-2010.
3. GPS and TEC measurement and Ionospheric Perturbations due to Earthquakes, Group Monitoring Workshops, 10-12, December 2009, I.I.G., Mumbai.
4. Atmospheric Aerosols and Climate Change in the Indo-Gangatic Basin, International Workshop on Spectroscopic Signatures of Molecular Complexes/Ions in our Atmosphere and Beyond, February 2- 4, 2010, BHU, Varanasi.
5. Spectroscopic Tools to study Atmosphere, Winter School on Recent Trends in Physics of Atoms, Molecules and Lasers, Jan 9-31, 2011.
6. Remote Sensing of Atmosphere, Refresher course in Earth Sciences, Academic Staff College, BHU, Varanasi, 2011.
7. Space weather studies at low latitude station, Varanasi, Brainstorming on Space Weather & Space Climate, PRL, Ahmadabad, 27-28 April, 2011.
8. Progress of ISRO-SSPS Programme to BHU, Review Meeting of ISRO-SSPS Programme, ISRO, Bangalore, 22-23 November, 2011.
9. Global Positioning System (GPS) and its Applications in Atmospheric Studies-I, **SERC School** on Seismo-electromagnetics, Depart. of Physics, R.B.S. College Bichpuri, Agra, 2012.
10. Global Positioning System (GPS) and its Applications in Atmospheric Studies-II, **SERC School** on Seismo-electromagnetics, Depart. of Physics, R.B.S. College Bichpuri, Agra, 2012.

11. Space Weather and its Effects, 6th Refresher Course in Environmental Studies, Academic Staff College, BHU, Varanasi, 2012.
12. Space weather studies of upper atmosphere, Department of Psychology, BHU, Varanasi, October, 2012.
13. Characteristics of atmospheric aerosols over Indo-Gangetic basin (IGB) using satellite and ground level multi-instrument measurements, National Symposium on Current Status and New Horizons of Ecological Sciences and Environmental Biotechnology (ESEB-13), BHU, Varanasi, 1-3, March, 2013.
14. Active Sun and the effects of Solar activity, Dayavati Modi Academy, Bharat Vikas Parishad, Ramnagar, 31st August, 2013.
15. Study of VLF Waves in India, Brain Storming Session on Indian Space Science Initiatives (ISSI), University of Calcutta, Kolkata, February 12-13, 2014.
16. Remote Sensing of Atmosphere using Spectroscopy (LIDAR), **Winter School** on Advances in Laser Spectroscopy and Applications, BHU, Varanasi, March 22-28, 2014.
17. Solar activity and Space weather parameters, **INSPIRE Program**, S.P. Memorial Institute of Technology, Allahabad, 26th September, 2014.
18. Space Weather and its Effects, 7th Refresher Courses in Environmental Studies, Academic Staff College, BHU, Varanasi, 9th October, 2014.
19. Mangalyaan: Mars Orbiter Mission, IPA – Colloquium, BHU, Varanasi, 10th October, 2014.
20. A Mission to Mars: Mangalyaan, **INSPIRE Program**, S.P. Memorial Institute of Technology, Allahabad, 2nd November, 2014.
21. India Space Mission: An overview, 299th Session of *Academique*: An interdisciplinary Discussion Group, DST-CIMS, BHU, Varanasi on 18th January, 2015.
22. MOM: Mars Orbiter Mission an overview, Workshop on "Physics of Particles and Nuclei and related instrumentation", BHU, Varanasi, 27-31 January, 2015.
23. Extreme Space Weather: Causes and Consequences, **Refresher Course** in Physics, Lucknow University, Lucknow, 10th February, 2015.
24. Mars and Indian Mission to Mars: Mangalyaan, **Refresher Course** in Physics, Lucknow University, Lucknow, 11th February, 2015.
25. Similarity between Mars & Earth and Mars Orbiter Mission, Workshop on “Characterization and Functionalization of Nanomaterials”, BHU, Varanasi, 9-13 March, 2015.

26. Space weather and its impacts, Summer School in Nuclear and Particle Physics, BHU, Varanasi, 23 September- 12 October, 2015.
27. Water on Mars, Summer School in Nuclear and Particle Physics, BHU, Varanasi, 23 September- 12 October, 2015.
28. Study of Atmospheric Aerosols, 7th Refresher Course in Environmental Studies, Academic Staff College, BHU, Varanasi, 15th December, 2015.
29. India's Mangalyam Mission: Recent results, NTSE Scholars Nurturance Programme, BHU, Varanasi, 18th January, 2016.
30. Space weather: An Introduction, NTSE Scholars Nurturance Programme, BHU, Varanasi, 20th January, 2016.
31. Space weather and its effects on Earth's Environment, **Winter School** on "Beyond the Standard Model Physics", 1 February, 2016.
32. Study of atmospheric Aerosols over Varanasi, National Seminar on Geographies of Varanasi and Environs, BHU, Varanasi on 12 March, 2016.
33. Recent results of Mars using Mars Orbital Mission, Third Graduate Seminar on Environment and Sustainable Development, IESD, BHU, 26-27, 2016.
34. Space Weather and its Consequences, Environmental Awareness Program & 4th Graduate Seminar on Environment & Sustainable Development, IESD, BHU, 16-17 March, 2018.
35. Effect Of Space Weather Events on Ionosphere over Low Latitude, **Keynote Speaker**, National Conference on Recent Trends in Space Science and Nano Materials, APS University, Rewa, 26-27 March, 2018.
36. Indian Planetary Missions: Mangalyan: Rajkiya Engineering College, Aajungarh, UP, 15 February, 2019.
37. Ionospheric Irregularities and quiet time Trends in TEC during recent Solar Cycle-24, URSI-RCS-2020, IIT-BHU, 12, February, 2020.
38. Physical, Optical and Chemical properties of atmospheric aerosols over Varanasi, National Conference on Environment and Energy Materials (NCEEM-2020), Sharda University, New Delhi, 27-28 June, 2020.
39. Remote Sensing of Atmosphere, Webinar Lecture Series on Applications of Geospatial Technology, Amity University, Noida, 17 June, 2020.

40. Effect of Space Weather on Ionosphere, E-Lecture Series, Mahatma Gandhi Central University, Motihari, Bihar, 6 June, 2020.
41. Remote Sensing of the Upper Atmosphere Using GPS & VLF Measurements, International Workshop on Joint Modernistic and Innovative Technology, JMIT, Radur, Haryana, 5 August, 2020.
42. Space weather events and its effect on the upper Ionosphere, One day Webinar on Space weather: Ionospheric and Technological Impacts, Doon University, Dehradun, 6 October, 2020.
43. Research Motivation Workshop/Lecture Series: An effort to nurture young female scientists, MMV, BHU, Varanasi, 13, December, 2020.
44. Space Weather: Its Causes & Consequences, International Conference on “Advances in Physics” 18-20 December, 2020, Gondwana University, Gadchiroli.
45. Ozone for Life, 16 September, 2021 at V.B.S. Purvanchal University, Jaunpur.

Details of Radio/television talks/interviews/performance during last 5 years:

1. Interview on Gaganyan Mission, Aakasvani, All India Radio station, 7 March, 2020.
2. Bhetvarta on “Saurya Vayumandal”, Aakasvani, All India Radio, 9 April, 2019.
3. Interview on “Bharat ke Antariksh me Badhte Kadam”, Gyanvani, IGNOU-Varanasi, FM Radio, 2018.
4. Bhetvarta on “Bharat ka Antariksh Program”, Gyanvani, IGNOU-Varanasi FM Radio, 2017.
5. Interview on Magnalyan Mission, Gyanvani, IGNOU, Varanasi, 2015.

PAPERS PRESENTED IN CONFERENCES/SYMPOSIA/SEMINARS

Total Papers presented in Conferences/Symposia/Seminars: **199**

In **National** Conferences/Symposia/Seminars: **116**

In **International** Conferences/Symposia/Seminars: **83**

1. Study of Low Latitude Whistlers and High Frequency Scintillations at Varanasi, Presented in *IUGG meeting*, Vienna, **Austria**, Aug. 1991.
2. Structure and Dynamics of Mars Ionosphere, *Proc. of National Space Science Symposium*, P. 57 – 58, Nagpur, 1990.
3. Co-ordinated Observation of VLF Emissions, *Proce. of Ins. Symp. in Optical and Radio Remote Sensing of the Atmos. Env.*, NPL, New Delhi, 24-26 Oct., 1990.

4. Study of VHF Scintillations at Varanasi, *Proc. of National Space Science Symposium*, P. 152-153, 1992.
5. Role of Ionospheric Turbulence on Amplitude Fluctuation of Radio Waves, *PLASMA-93, Saha Symposium on Plasma Sci. & Tech.*, Allahabad, 1993.
6. Study of Ionospheric Fluctuations Using Satellite Signal, Presented in *COSPAR-94*, Hamburg, **Germany**, 1994.
7. Observation of Oscillating Tone Using Improved Ground Based Facilities, *COSPAR-94*, Hamberg, **Germany**, 1994.
8. Wave Particle Interaction and VLF Hiss at Low Latitude, *PLASMA-94*, Guwahati, 1994.
9. Damping of Manetospheric Waves and Acceleration of Solar Wind Plasma, *PLASMA-94*, Guvahati, 1994.
10. High Dispersion Whistlers at Low Latitude Indian Stations, *NSSS-94*, Triuanatpuram, Kerla, December, 1994.
11. Probing of Ionospheric Electron Density Irregularities, *PLASMA-95, Symposium on Plasma Science and Technology*, BHU, Varanasi, October, 1995.
12. Estimate of Duct Life Times Through Whistler Analysis, *PLASMA-95, Symposium on Plasma Science and Technology*, BHU, Varanasi, October, 1995.
13. Observations of Chorus Emissions at Varanasi, *PLASMA-95, Symposium on Plasma Science and Technology*, BHU, Varanasi, October, 1995.
14. Study of Ionospheric Plasma Fluctuations Using Electromagnetic Waves, *Symposium on Plasma Science*, IIT Kanpur, 8-10 November, 1995.
15. Study of Ionospheric Irregularities at Low Latitude, *83rd Science Congress*, Patiala, Punjab, 3-7 January, 1996.
16. Determination of Ionospheric/Magnetospheric Proton Density and Proton Temp. from Proton Whistlers, *NSSS-96*, Osmania University, Hyderabad, 6-8 Feb., 1996.
17. Observations and Modelling of Ionospheric Irregularities at the Edge of Equatorial Anomaly, *31st COSPAR Scientific Assembly*, Birmingham, **UK**, 14-21 July, 1996.
18. VLF Hiss and Wave Particle Interaction at Low latitudes, *31st COSPAR Scientific Assembly*, Birmingham, **UK**, 14-21 July, 1996.

19. Electromagnetic Waves Through the Ionospheric Plasma, *PLASMA-96*, Bhopal, October, 1996.
20. Morphological Features of Electron Density Irregularities at Varanasi, *PLASMA-96*, Bhopal, October, 1996.
21. Observations and Modelling of Small Scale Ionospheric Irregularities in Low Latitude Region, *84th Science Congress*, New Delhi, 3 -7 January, 1997.
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53. Role of geomagnetic disturbances on VLF Whistler wave activity at low latitude, *2nd UN/NASA Workshop on International Heliophysical Year and Basic Space Science*, Indian Institute of Astrophysics, Bangalore during Nov. 27-Dec. 1, 2006.
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60. Study of VHF Scintillation Recorded at low latitude station Varanasi, 2nd one day conference *New Trends in Research*, 17 January 2009, Department of Physics, B.H.U.
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64. VLF Hiss emissions observed at Indian Antarctic station, Maitri, 24th *National Symposium on Plasma Science & Technology (PLASMA-2009)*, 8-10, December, 2009, NIT, Hamirpur, HP.
65. Detection of precursor to earthquake ionospheric signature using ground based multi-instrument observations, 24th *National Symposium on Plasma Science & Technology (PLASMA-2009)*, 8-10, December, 2009, NIT, Hamirpur, HP.
66. Characteristics of topside Ionospheric plasma bubbles observed by DMSP, 24th *National Symposium on Plasma Science & Technology (PLASMA-2009)*, 8-10, December, 2009, NIT, Hamirpur, HP.
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68. Observation of Whistler-mode Chorus emissions at Indian Antarctic Station, Maitri (L = 4.5), 38th *COSPAR Scientific Assembly*, 18-25 July 2010, Bremen, **Germany**.
69. Anomalous Seismo-ionospheric perturbations observed in Sub-ionospheric VLF signal, 38th *COSPAR Scientific Assembly*, 18-25 July 2010, Bremen, **Germany**.
70. Variations of TEC near the Indian Equatorial Ionospheric anomaly (EIA) stations by GPS measurements during descending phase of solar activity (2005-2009), 38th *COSPAR Scientific Assembly*, 18-25 July 2010, Bremen, **Germany**.
71. Studies of Plasma Bubbles & Comparison of TEC Fluctuations & Scintillations at Varanasi using GPS data, 38th *COSPAR Scientific Assembly*, 18-25 July 2010, Bremen, **Germany**.

72. Validation of MODIS derived Aerosol optical depth and influence of humidity and rainfall on AOD over the Indo-Gangetic basin, *38th COSPAR Scientific Assembly*, 18-25 July 2010, Bremen, **Germany**.
73. Examination of D-region ionosphere variability during total solar eclipse of 22 July 2009: investigated from VLF observations in India, *16th National Symposium Space Science (NSSS-2010)*, Saurashtra University, Rajkot, 24-27 February, 2010.
74. Study the lightning and associated precipitation activity associated with sprites, *16th National Symposium Space Science (NSSS-2010)*, Saurashtra University, Rajkot, 24-27 February, 2010.
75. Study of variability of ionospheric TEC during intense geomagnetic storms, *16th National Symposium Space Science (NSSS-2010)*, Saurashtra University, Rajkot, 24-27 February, 2010.
76. Study of ionospheric scintillation using GPS data, *16th National Symposium Space Science (NSSS-2010)*, Saurashtra University, Rajkot, 24-27 February, 2010.
77. Overview of operational & scientific results obtained from AWESOME VLF receivers in India: for ionosphere/magnetosphere plasma studies, *16th National Symposium Space Science (NSSS-2010)*, Saurashtra University, Rajkot, 24-27 February, 2010.
78. Observation of Trimpi events at Varanasi (L=1.07) using sub-ionospheric VLF signals, *16th National Symposium Space Science (NSSS-2010)*, Saurashtra University, Rajkot, 24-27 February, 2010.
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80. Variability of Aerosol optical depth over the Indo-Gangatic plain, *16th National Symposium Space Science (NSSS-2010)*, Saurashtra University, Rajkot, 24-27 February, 2010.
81. GPS Detection of ionospheric perturbations before some Major earthquakes, *Seventh Annual Meeting of Asia Oceania Geosciences Society (AOGS-2010)*, 5-9 July, 2010, Hyderabad.
82. Pre-Ionospheric Anomalies Observed Before Few Strong Earthquakes Over Ground Station Varanasi, *3rd One day conference on New Trends in Physics*, Department of Physics, BHU March 30, 2010.
83. Trimpi Events and Other Amplitude Perturbations Observed at Varanasi Using SoftPal Receiver, *Seventh Annual Meeting of Asia Oceania Geosciences Society (AOGS-2010)*, 5-9 July, 2010, Hyderabad.

84. GPS-TEC Response to geomagnetic storms at Indian low latitude stations, *3rd One day conference on New Trends in Physics*, Department of Physics, BHU March 30, 2010.
85. Pre-Earthquake Ionospheric Anomalies Observed Using Ground Based Multi-instruments, *Seventh Annual Meeting of Asia Oceania Geosciences Society (AOGS-2010)* 5-9 July, 2010, Hyderabad.
86. Explanation of Observation of Multi-Component ELF Whistlers at Low Latitude, *Seventh Annual Meeting of Asia Oceania Geosciences Society (AOGS-2010)* 5-9 July, 2010, Hyderabad.
87. Nonlinear Generation Mechanism of VLF Chorus Emissions Observed at Antarctica during Quiet Periods, *Seventh Annual Meeting of Asia Oceania Geosciences Society (AOGS-2010)* 5-9 July, 2010, Hyderabad.
88. D-region Ionospheric Diagnostic with tweeks recorded at Allahabad & Nainital, *Seventh Annual Meeting of Asia Oceania Geosciences Society (AOGS-2010)* 5-9 July, 2010, Hyderabad.
89. D-region ionospheric dynamics as inferred from narrowband VLF Observations during 22 July, 2009 total solar eclipse, *Seventh Annual Meeting of Asia Oceania Geosciences Society (AOGS-2010)* 5-9 July, 2010, Hyderabad.
90. Atmospheric Aerosols and Climate Change in the Indo-Gangatic Basin, *International Workshop on Spectroscopic Signatures of Molecular Complexes/Ions in our Atmosphere and Beyond*, February 2- 4, 2010, BHU, Varanasi.
91. Results of GPS Measurements at the Rajiv Gandhi South Campus, B.H.U., Barkachha, *Group Monitoring Workshop meet of Ministry of Earth Sciences*, 20-21, January, 2010, Andhra Univ., Visakhapatnam.
92. Ground Based Multi-Instrument Study of Ionospheric Anomalies Associated With Some Major Earthquakes, *International Workshop on Seismo-Electromagnetics & Atmospheric Science (IWSE-AS 2010)*, 16 – 18 Nov. 2010, Agra.
93. VLF Chorus Emissions Observed at Indian Antarctic Station Maitri, Antarctica, *International Workshop on Seismo-Electromagnetics & Atmospheric Science (IWSE-AS 2010)*, 16 – 18 Nov. 2010, Agra.
94. Properties of 1d-plasma photonic crystal having linear index, *25th National Symposium on Plasma Science & Technology (PLASMA-2010)*, 8-11, Dec, 2010, Guwahati, Assam.
95. Effect of electron precipitation on the propagation of VLF signals in the Earth-ionosphere waveguide, *25th National Symposium on Plasma Science & Technology (PLASMA-2010)*, 8-11, Dec, 2010, Guwahati, Assam.

96. GPS-TEC variability and its comparison with IRI-model TEC during low solar activity period (2007-2009), *25th National Symposium on Plasma Science & Technology (PLASMA-2010)*, 8-11, Dec, 2010, Guwahati, Assam.
97. Study of ionospheric plasma irregularities using VHF scintillation and in-situ data by SCROSS satellite at low latitude, *25th National Symposium on Plasma Science & Technology (PLASMA-2010)*, 8-11, Dec, 2010, Guwahati, Assam.
98. Monitoring of ionospheric plasma bubbles and TEC using GPS data at Varanasi, *25th National Symposium on Plasma Science & Technology (PLASMA-2010)*, 8-11, Dec, 2010, Guwahati, Assam.
99. Variability of aerosol optical depth over IG-basin during major dust storms, *25th National Symposium on Plasma Science & Technology (PLASMA-2010)*, 8-11, Dec, 2010, Guwahati, Assam.
100. Study of Seismo - Ionospheric Anomalies Induced by 29 September 2007 Sumatra Earthquake (M=6.2), *International Conference on Geophysical Sciences – Energy, Climate Change and Evolution of Human Society (ICON GSECCES-2010)* December-21-23, 2010.
101. A comparison of TEC fluctuation and scintillation at Low latitude ground Station Varanasi, *International Conference on Geophysical Sciences – Energy, Climate Change and Evolution of Human Society (ICON GSECCES-2010)* December-21-23, 2010.
102. Validation of MODIS Terra, AIRS, and AERONET derived integrated perceptible water vapor (IPWV) using ground based GPS receivers over Indo-Gangetic basin *International Conference on Geophysical Sciences – Energy, Climate Change and Evolution of Human Society (ICON GSECCES-2010)* December-21-23, 2010.
103. Effects of Dust storms on Aerosol loading over IG-basin, *International Conference on Geophysical Sciences – Energy, Climate Change and Evolution of Human Society (ICON GSECCES-2010)* December-21-23, 2010.
104. GPS based TEC measurements and ionospheric perturbations due to Earthquakes, *Group Monitoring Workshop of Department of Science & Technology (DST)*, Cochin University, Cochin, 11-12, Jan, 2011.
105. Variability of GPS-derived perceptible water vapor (PWV) and its validation with MODIS Terra, AIRS and AERONET derived water vapor over the Indo-Gangetic Basin, *National Conference on Advances in Atmospheric Remote Sensing, Weather prediction & Climate change (ARWPCC- 2011)*, 10-11 March, 2011 at SV University, Tirupati.
106. Aerosol Characteristics at Varanasi located in Indo-Gangetic Basin during wintertime, *National Conference on Advances in Atmospheric Remote Sensing, Weather prediction & Climate change (ARWPCC- 2011)*, 10-11 March, 2011 at SV University, Tirupati.

107. Remote sensing of dust storm aerosols in the Indo-gangetic plain, *National Conference on Advances in Atmospheric Remote Sensing, Weather prediction & Climate change (ARWPCC- 2011)*, 10-11 March, 2011 at SV University, Tirupati.
108. Remote Sensing of Ionosphere and Magnetosphere using ELF/VLF Waves at Low Latitudes, *CAWSES Workshop on Space Weather and Space Climate*, PRL, Ahmedabad, 27-28 April, 2011.
109. Effect of Geomagnetic Activity on Ionospheric Range-Error in GPS Signal during Low Solar-Activity Period at Low Latitude Station Varanasi, *National Conference on Science of Climate Change and Earth Sustainability: Issues and Challenges*, Lucknow, September 12-14, 2011.
110. Study of Characteristics of Atmospheric Aerosols during Dust Storm in Indo-Gangetic Basin, *National Conference on Science of Climate Change and Earth Sustainability: Issues and Challenges*, Lucknow, September 12-14, 2011.
111. Study of Plasma bubbles using GPS data at low latitude ground station Varanasi, *National Conference on Science of Climate Change and Earth Sustainability: Issues and Challenges*, Lucknow, September 12-14, 2011.
112. Variation of Aerosol Optical Depth over Varanasi located in Indo-Gangetic Basin, *National Conference on Science of Climate Change and Earth Sustainability: Issues and Challenges*, Lucknow, September 12-14, 2011.
113. Amplitude and phase perturbations observed during 2010 on the VLF radio signal NWC at Varanasi ($L = 1.07$), *Indo-US Workshop on Advancing VLF Science through the Global AWESOME Network*, Goa, 28 Nov-1 Dec, 2011.
114. Remote sensing of D-region ionosphere using VLF radio atmospherics observed at Varanasi, *Indo-US Workshop on Advancing VLF Science through the Global AWESOME Network*, Goa, 28 Nov-1 Dec, 2011.
115. Amplitude & phase variations of VLF wave during major space weather events in February 2011, *Indo-US Workshop on Advancing VLF Science through the Global AWESOME Network*, Goa, 28 Nov-1 Dec, 2011.
116. Multi-instrument detection of ionospheric perturbations due to some major earthquakes ($M > 5$), *Indo-US Workshop on Advancing VLF Science through the Global AWESOME Network*, Goa, 28 Nov-1 Dec, 2011.
117. Observations of rising tone chorus emissions at low latitude station Jammu and its generation mechanism, *Indo-US Workshop on Advancing VLF Science through the Global AWESOME Network*, Goa, 28 Nov-1 Dec, 2011.

118. Coordinated Study of VLF Waves in India using Automatic Whistler Detector (AWD): Preliminary Results, *Indo-US Workshop on Advancing VLF Science through the Global AWESOME Network*, Goa, 28 Nov-1 Dec, 2011.
119. Night time D-region electron density measurements from tweek radio atmospherics recorded at low latitudes, *Indo-US Workshop on Advancing VLF Science through the Global AWESOME Network*, Goa, 28 Nov-1 Dec, 2011.
120. Overview of VLF research and results using AWESOME receivers at India, *Indo-US Workshop on Advancing VLF Science through the Global AWESOME Network*, Goa, 28 Nov-1 Dec, 2011.
121. Characteristic of Ionospheric Plasma Bubbles observed at Low Latitude, *26th National Symposium on Plasma Science & Technology (PLASMA-2011)*, 20-23, Dec, 2011, BIT, Patna.
122. Determination of plasmaspheric parameters from whistler diagnostic, *26th National Symposium on Plasma Science & Technology (PLASMA-2011)*, 20-23, Dec, 2011, BIT, Patna.
123. Characteristic of Plasma Parameters of D-Region of Ionosphere observed at Low Latitude, *26th National Symposium on Plasma Science & Technology (PLASMA-2011)*, 20-23, Dec, 2011, BIT, Patna.
124. Characteristics of ionospheric plasma irregularities at low latitude using vhf scintillation, *26th National Symposium on Plasma Science & Technology (PLASMA-2011)*, 20-23, Dec, 2011, BIT, Patna.
125. Study of Equatorial plasma bubble using STEC at low latitude ground station Varanasi, *4th One day conference on New Trends in Physics*, Department of Physics, BHU 2011.
126. Aerosols: From air pollution to climate change in Indo-Gangetic basin, *4th One day conference on New Trends in Physics*, Department of Physics, BHU 2011.
127. Space weather effect on GPS based navigational systems, *4th One day conference on New Trends in Physics*, Department of Physics, BHU 2011.
128. Observation of Haze Layer and Boundary Layer Dynamics over Varanasi using LIDAR, *4th One day conference on New Trends in Physics*, Department of Physics, BHU 2011.
129. Ionospheric Plasma Diagnostics using Tweek analysis, *4th One day conference on New Trends in Physics*, Department of Physics, BHU, 2011.
130. Characteristics of Atmospheric Aerosols during major Dust Storm in Indo-Gangetic Basin, *17th National Space Science Symposium (NSSS-12)*, Sri Venkateswara University, Tirupati, 14-17 February, 2012.

131. Response of ionosphere to the total solar eclipse of 22 July 2009 using multi-instrument observations at low-latitude, *17th National Space Science Symposium (NSSS-12)*, Sri Venkateswara University, Tirupati, 14-17 February, 2012.
132. Probing of D-Region of Ionosphere by VLF waves at Low Latitude, *17th National Space Science Symposium (NSSS-12)*, Sri Venkateswara University, Tirupati, 14-17 February, 2012.
133. Characteristics of Atmospheric Aerosol using Multi-Instruments at Varanasi located in Indo-Gangetic Basin, *17th National Space Science Symposium (NSSS-12)*, Sri Venkateswara University, Tirupati, 14-17 February, 2012.
134. Monitoring Nighttime D-region Ionosphere Using Tweek atmospherics at Low Latitude, *39th COSPAR Scientific Assembly*, Mysore, 14 - 22 July 2012.
135. Atmospheric Aerosol properties observed at Varanasi using ground and satellite measurements, *39th COSPAR Scientific Assembly*, Mysore, 14 - 22 July 2012.
136. Changes in D-region ionospheric electron density during X-ray solar flares evaluated from VLF measurements, *39th COSPAR Scientific Assembly*, Mysore, 14 - 22 July 2012.
137. Effect of Total Solar Eclipse of 22 July 2009 on D-region of the ionosphere evaluated from ELF/VLF analysis, *39th COSPAR Scientific Assembly*, Mysore, 14 - 22 July 2012.
138. Characteristics of Atmospheric and Meteorological Parameters Associated with Major Dust storms during 2009-2010 over the Indo-Gangetic basin, *39th COSPAR Scientific Assembly*, Mysore, 14 - 22 July 2012.
139. Effect of Space weather events on Ionospheric TEC at Indian low-latitude station, *39th COSPAR Scientific Assembly*, Mysore, 14 - 22 July 2012.
140. Influence of Major Dust Storm Events on Aerosol Optical Properties over the Indo-Gangetic Basin, *2nd International Workshop on Spectroscopic Signatures of Molecular Complexes/Ions in our Atmosphere and Beyond*, BHU, Varanasi, February 7-10, 2012.
141. Characteristics of Atmospheric Aerosol observed over Varanasi, *2nd International Workshop on Spectroscopic Signatures of Molecular Complexes/Ions in our Atmosphere and Beyond*, BHU, Varanasi, February 7-10, 2012.
142. Space Weather Study of Upper Atmosphere using VLF Waves, *International symposium on Solar-Terrestrial Physics (ISSTP-12)*, IISER, Pune, 6-9 Nov., 2012.
143. Early VLF perturbations with long recovery times at low latitudes: A new phenomena, *International symposium on Solar-Terrestrial Physics (ISSTP-12)*, IISER, Pune, 6-9 Nov., 2012.

144. Response of ionosphere to the total solar eclipse of 22 July 2009 using multi-instrument observations at low-latitude, *AOGS - AGU (WPGM) Joint Assembly*, Singapore, 13-17 August, 2012.
145. Solar Flare Induced D-region Ionospheric Perturbations Evaluated from VLF Amplitude and Phase Measurements, *AOGS - AGU (WPGM) Joint Assembly*, Singapore, 13-17 August, 2012.
146. Study of Atmospheric Aerosols in the Indo-Gangetic Basin and their dependence on various processes, First workshop on “*Challenges and Opportunities for Air Pollution and Climate Change*” (**CHOP-C**) held at the Indian Institute of Tropical Meteorology (IITM), Pune, India, 16-18 January 2012.
147. Characteristics of atmospheric aerosols over Indo-Gangetic basin (IGB) using satellite and ground level multi-instrument measurements, *National Symposium on Current Status and New Horizons of Ecological Sciences and Environmental Biotechnology (ESEB-13)*, BHU, Varanasi, 1-3, March, 2013.
148. Personal Exposure to Particulate Matter for Students of BHU-Varanasi situated in Indo-Gangetic Basin, *National Symposium on Chemistry and Environment (NSCE-2013)*, BHU, Varanasi, 15-16 March, 2013.
149. Characterisation of Atmospheric Aerosol by SEM-EDX Analysis in the Urban Atmosphere of Varanasi, India, *National Symposium on Chemistry and Environment (NSCE-2013)*, BHU, Varanasi, 15-16 March, 2013.
150. Association of Rainfall with Aerosols, NDVI and EVI over IGP during recent years, *AGU Fall Meeting*, San Francisco, 9-13 December, 2013.
151. High Black Carbon Concentrations and Atmospheric Pollution Around Indian Coal Fired Thermal Power Plants, *AGU Fall Meeting*, San Francisco, 9-13 December, 2013.
152. Characteristic of The Equatorial Plasma Bubbles Occurred Over Varanasi During 2009-2012 Using GPS Based Measurements, 28th National Symposium on Plasma Science & Technology (*PLASMA 2013*), Bhubaneswar, 3-6 December 2013.
153. The Study of The Earth’s Plasmaspher Using Whistlers Recorded at Indian Low Latitude Station, Varanasi (L=1.07), 28th National Symposium on Plasma Science & Technology (*PLASMA 2013*), Bhubaneswar, 3-6 December 2013.
154. Remote Sensing of Magnetosphere using Whistlers observed at Varanasi, 17th National Space Science Symposium (**NSSS-14**), Dibrugarh, 29 January - 1 February, 2014.

155. Study of ionospheric irregularities observed at Low Latitude during 2009- 2012 using GPS Scintillations, *17th National Space Science Symposium (NSSS-14)*, Dibrugarh, 29 January - 1 February, 2014.
156. Study of VLF Waves in India, Brain Storming Session on *Indian Space Science Initiatives (ISSI)*, University of Calcutta, Kolkata, February 12-13, 2014.
157. Characterisation of Atmospheric Aerosol by SEM-EDX Analysis at Varanasi, Conference of Indian Aerosol Science & Technology Association (*IASTA-2014*), BHU, Varanasi, November, 11-13, 2014.
158. Heterogeneity in Aerosol Loading over the Indo Gangetic Basin and their Climatic Implications, Conference of Indian Aerosol Science & Technology Association (*IASTA-2014*), BHU, Varanasi, November, 11-13, 2014.
159. Study of Aerosol Types and their Optical Properties over Varanasi using Air Mass Back Trajectory, Conference of Indian Aerosol Science & Technology Association (*IASTA-2014*), BHU, Varanasi, November, 11-13, 2014.
160. Aerosol Characteristics during major Dust Storms over Indo-Gangetic Basin, Conference of Indian Aerosol Science & Technology Association (*IASTA-2014*), BHU, Varanasi, November, 11-13, 2014.
161. Study of Equatorial Plasma Bubbles using Slant Total Electron Content observations over Varanasi, India, 29th National Symposium on Plasma Science & Technology (*PLASMA-2014*), Mahatma Gandhi University, Kottayam (Kerala) 8-11 December, 2014.
162. Synchrotron Emissions From Relativistic Electron Trapped In Jovian Magnetoplasma, 29th National Symposium on Plasma Science & Technology (*PLASMA-2014*), Mahatma Gandhi University, Kottayam (Kerala) 8-11 December, 2014.
163. Whistlers: A diagnostic tool for study of the Earth's Magnetosphere, *8th One day conference on New Trends in Physics*, Department of Physics, BHU, 2015.
164. A study of ionospheric response of intense X-class solar flare on the equatorial and low-latitude ionosphere, International Conference on Contemporary Advances of Science & Technology (*IC-CAST-2015*), BHU, Varanasi, August 7-9, 2015.
165. Whistlers detected and analyzed by Automatic Whistler Detector at Varanasi during 2014, International Conference on Contemporary Advances of Science & Technology (*IC-CAST-2015*), BHU, Varanasi, August 7-9, 2015.
166. Source Identification of Major Geomagnetic Storms during Ascending Phase of Solar Cycle 24, International Conference on Contemporary Advances of Science & Technology (*IC-CAST-2015*), BHU, Varanasi, August 7-9, 2015.

167. Climate Impact of Various Aerosol Type over Indo- Gangetic Basin, India, Asian aerosol Conference, Kanazawa, 2015.
168. Statistical analysis of ionospheric irregularities at low latitude over Varanasi, India during 2009-2014, 2nd URSI Regional Conference on Radio Science, (*URSI RCRS 2015*), 16-19 November 2015, New Delhi.
169. Identification of Solar Sources of Major Geomagnetic Storms between 2010 and 2014, 2nd URSI Regional Conference on Radio Science, (*URSI RCRS 2015*), 16-19 November 2015, New Delhi.
170. Ionospheric response to an intense X-class solar flare in equatorial and low latitude region 2nd URSI Regional Conference on Radio Science, (*URSI RCRS 2015*), 16-19 November 2015, New Delhi.
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