Curriculam Vitae

1. Name: Dr. Kavita Sharma

2. Present position: Assistant Professor (Contract) in Department of Physics, CCS University campus, Meerut

3. Mailing Address

Address: Dr. Kavita Sharma
A-105, Somdutt City
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4. Academic qualification

S.No	Examination	Univ./ Board	Year	Subjects	% Of Marks	Division
(i)	High School (10th)	U.P. Board, Allahabad	1994	Hindi, English, Science, Biology, Mathematics & Social Studies	67.66	First
(ii)	Intermediate (10+2)	U.P. Board, Allahabad	1996	Hindi, English, Physics, Chemistry & Mathematics	70.63	First
(iii)	Bachelor of Science (B.SC.)	C.C.S. University Meerut	1999	Physics, Chemistry & Mathematics	69.10	First
(iv)	Master of Science (M.SC.)	C.C.S. University Meerut	2001	Physics	81	First
(v)	PhD	National Physical Laboratory New Delhi&C.C.S. University, Meerut	Jun-2009, Title of Thesis: 'Study of short and long term variations of ionospheric F-region parameters for empirical modeling of ionosphere over Indian zone' Ph.D. Supervisors: Dr. R.S. Dabas & Dr. A.K. Mishra			
(vi)	PDF	European Space Research and Technology Centre/ESA, The Netherlands	2010			

5. Brief description of my research work

I have developed two empirical ionospheric models (viz. Multi Regression Analysis & Second Degree model) for prediction of ionospheric F-region parameters on short and long term basis over equatorial and low latitude ionosphere using manually scaled ionosonde data. The models are user friendly computer based models and one can obtain F-layer parameters such as foF2, hmF2 and MUF(4000)F2 by providing necessary inputs like latitude, month, R12, F10 and Ap values. The Multi Regression Analysis (MRA) model can be successfully used for providing warnings to the HF users on possible disruptions caused by a variety of space weather disturbances. The present study would turn out to be extremely important in the development of a full proof ionospheric HF prediction model for the equatorial and low latitude ionospheric region.

I have been involved in the prediction of ongoing sunspot cycle 24 using geomagnetic precursor techniques. In this technique, the Disturbance Index, during the declining portion of previous cycle can be used as a precursor to estimate the size and timing of the maximum sunspot amplitude for the next sunspot cycle.

I have studied the anomalous perturbations in ionospheric F-region parameters few days before Sumatra earthquake (2004), Koyna earthquake (1967) and three deadly earthquakes (M > 6) of China during the months of March, May, and August 2008. The obtained results in each case show prominent precursory signatures and indicate seismo-ionospheric coupling far-off from its epicenter. The results of China earthquake studies are published in JGR-Space Physics (an American Geophysical Union journal). This paper is widely cited in ionospheric precursors of earthquakes related research (Total Citation – 172)

I have also studied post sunset IEC (Ionospheric Total Electron Content) variations, utilizing the IEC data recorded simultaneously at a network of stations located around 84oE geographic meridian and covering a latitude belt of 30°N to 21°N geomagnetic. This study has led to an important conclusion concerning the onset of strong post-sunset scintillations at equatorial and nearby latitudes.

I also worked on the diurnal and seasonal variations of TEC and L-band scintillations derived from GPS over equatorial and low latitude stations i.e. Trivandrum and Delhi respectively, during the low sunspot activity (LSSA) period from December 2006 to December 2007.

In addition to my above mentioned work, I was actively involved in providing Space Weather Alerts/Predictions to different users of Regional Warning Center (RWC-RASD, NPL New Delhi-India) like Defense Services, ISRO, Air India etc through daily email messages.

6. Skills

Handling and data analysis of ionospheric monitoring systems: Network of Ionosondes, GPS receiver and Tomographic receiver

Programming Language: FORTRAN

Operating Systems: UNIX, LINUX and WINDOWS

Other Software: Arcview, winsurf, Origin, Latex, Microsoft Office, Adobe Acrobats, GS tools, tableau Etc

7. Teaching Experience

Presently working in the Department of Physics, C.C.S. University Meerut since March 2012.

Courses taught:	Laboratory
Electronic Devices	Electronics Lab-M.Sc. III Semester
Electromagnetic Theory & Plasma Physics	Electronics Lab-M.Sc. IV Semester
Electronic Communication (Analog & Digital)	

8. Awards/Distinctions

(i) **Postdoctoral Fellowship** of **European Space Agency** to work at Solar System Science Operations Divisions, ESTEC, The Netherlands for one Year 2010

(ii) **Research Associate** of Council of Scientific & Industrial Research (CSIR), India from April 2010 to October 2010.

(iii) **Senior Research Fellowship** from Council of Scientific & Industrial Research (CSIR), India from April 2007 to March 2010 for perusing Ph.D. work at NPL, New Delhi.

(iv) Passed **"Graduate Aptitude Test in Engineering (GATE)"** with percentile 94.16 conducted by Ministry of Human Resource Development, India on all India test basis after availing Master's Degree in Physics.

(v) **"CSIR Research Intern fellowship"** from September 2004 to September 2006.

(vi) **Srimati Prakashwati dayal Gold Medal** for Securing ***1st*** **rank** in the ***"Merit List of C.C.S. University, Meerut, India"*** of **M.Sc. 2001** examination.

(vi) **National Scholarship** from Government of India during the period 1995-2000 for Persuing 10+2 school courses, B.Sc. and M.Sc Degree courses.

9. Publications in Refereed Journals:

1. Metal Oxide Nanomaterials based sensors for monitoring environmental NO_2 and its impact on plant ecosystem: A Review,Shrestha Tyagi, Manika Chaudhary, Anit K.

Ambedkar, **Kavita Sharma*,** Yogendra K. Gautam**,** Beer Pal Singh*,**Sensors & Diagnostics 1(2022)106-129.**

2. Metal oxide semiconductor manostructures-based greenhouse gas sensors: progress and challenges, YogendraK.Gautam*, **Kavita Sharma***, S. Tyagi A. Ambedkar, M. Chaudhary, BeerPal Singh*, **Royal Society Open Science,** 8:201324(2021)1-42 **(Impact Factor: 3.653).**

3. **Kavita Sharma,** R. S. Dabas and Sudha Ravindran *"Study of total electron content variations over equatorial and low latitude ionosphere during extreme solar minimum"* Astrophysics and Space Science, Vol. No. 341, issue 2, page no. 277-286, 2012 (Impact Factor – 2.064)

4. **Kavita Sharma,** R. S. Dabas, S.K.Sarkar, 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 of China"* Journal of Geophysical Research, Vol. 115, A11313, doi:10.1029/2009JA014842, 2010, (Impact Factor – 3.174)

5. **Kavita Sharma** and R.S. Dabas "*Prediction of Solar Cycle 24 Using Geomagnetic Precursors:Validation and Update*" Solar Physics, Vol. No. 266(2), 391, 2010, (Impact Factor – 3.25).
6. Sneha Yadav, R. S. Dabas, Rupesh M. Das, A. K. Upadhayaya, **Kavita Sharma,** A. K. Gwal, *"Diurnal and seasonal variation of F2-layer ionospheric parameters at equatorial ionization anomaly crest region and their comparison with IRI2001"*Advances in Space Research 01/2010; 45(3):361-367. DOI:10.1016/j.asr.2009.08.018 (Impact Factor: 1.18)

7. R. S. Dabas, **Kavita Sharma,** Rupesh M. Das, N. K. Sethi, K.G.M. Pillai and A.K.Mishra. *"Modeling of F-region parameters using a Multi-variant Regression Analysis over Delhi."*Journal of Geophysical Research, Vol. 113, A03306, doi:10.1029/2007JA012539, 2008, (Impact Factor – 3.174).
8. **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 time of Koyna Earthquake"* Advances in Space Research Vol. No. 42, 1238-1245, 2008 (Impact Factor – 1.186).

9. R. S. Dabas, **Kavita Sharma,** Rupesh M. Das, Parvati Chopra, K.G.M. Pillai and N.K.Sethi, *"A Prediction of Solar Cycle 24 using a modified Precursor Method"* Solar Physics, Vol. No. 250, 171-181, 2008 (Impact Factor – 3.25).

10. N.K.Sethi, R.S.Dabas**, Kavita Sharma,** "Comparison between IRI predictions and digital ionosonde measurements of hmF2 at New Delhi during low and moderate solar activity" Journal of Atmospheric and Solar-Terrestrial Physics, Vol. No.70, 756-763, 2008, (Impact Factor – 1.417).

11. R. S. Dabas, Rupesh M. Das, **Kavita Sharma** and K. G. M. Pillai. *"Ionospheric pre-cursors observed over low latitudes during some of the recent major earthquakes."*

Journal of Atmospheric and Solar-Terrestrial Physics, Vol. No. 69, 1813-1824, 2007 (Impact Factor – 1.417).

12. 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, Vol. No. 28, 3141-3151, 2007 (Impact Factor – 1.1).

13. R. S. Dabas, Rupesh M. Das, **Kavita Sharma,** S. C. Garg, C. V. Devasia, K. S. V. Subbarao, K. Niranjan and P. V. S. Rama Rao. *"Study of the Equatorial and Low latitude Spread F Occurrence Characteristics and their Possible redictions in the Indian zone."*Journal of Atmospheric and Solar-Terrestrial Physics, Vol. No. 69, 685-696, 2007 (Impact Factor – 1.417).

14. 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, Vol. No. 68, 1622-1632, 2006 (Impact Factor – 1.417).

Books Chapters

1) Applications of green nanomaterials in coatings, Yogendra K. Gautam***,** **Kavita Sharma,** Shrestha Tyagi, Ashwani Kumar, Beer Pal Singh* book chapter to be published in the book titled "Green Nanomaterials for Industrial Applications" Published by Elsevier -2021.ISBN: 9780128236222. doi.org/10.1016/B978-0-12-823296-5.00014-9.

2) Sustainable nanomaterials for environmental remediation, **Kavita Sharma,** Shrestha Tyagi, Sagar Vikal, Arti Devi, Yogendra K. Gautam***** and Beer Pal Singh* book chapter published in the book Handbook of Green and Sustainable Nanotechnology,doi.org/10.1007/978-3-030-69023-6_13-1.by SPRINGER, 2022.

3) Transition Metal Dichalcogenides (TMDs) Nanocomposites-based Supercapacitors, Shrestha Tyagi, **Kavita Sharma,** Ashwani Kumar, Yogendra K. Gautam, Anil Kumar Malik, Beer Pal Singh*, book chapter published-2022. Nanomaterials for Innovative Energy Systems and Devices, Materials Horizons: From Nature to Nanomaterials, https://doi.org/10.1007/978-981-19-0553-7_3.

4) Sustainable green nanomaterials for advanced treatment process for contaminated water and soil, **Kavita Sharma,** Shrestha Tyagi, Sagar Vikal, Arti Devi, Yogendra K. Gautam*, Beer Pal Singh, book chapter published in the book titled "Green and Sustainable Nanotechnology"10.1007/978-3-030-69023-6_13-1 by SPRINGER, 2022.

5) Green and Sustainable Nanotechnology for Clean Energy Production, Beer Pal Singh, **Kavita Sharma,** Shrestha Tyagi, Durvesh Gautam, Manika Chaudhary, Ashwani Kumar, Sagar Vikal and Yogendra K. Gautam*, book chapter to be published in the book titled "Green and Sustainable Nanotechnology" by SPRINGER **(corrected proof in press) 2022.**

10. Invited lectures / Resource Person / Paper Presentation in Seminars / Conferences/ Full Paper in Conference Proceedings

Sl. No.	Title of the lecture/ paper presented	Title of Seminar/ Conference	Date	Organizer	International (abroad or within country / National/ State / University)	Mode
1.	Prediction of the upcoming Solar Cycle 25 using Geomagnetic Precursor Technique	International Webinar on Air Quality, Climate Change and the Environment Effects Referring to the Pandemic COVID-19 Lockdown	May 02-03, 2020	Institutional Innovation Cell, H.N.B. Garhwal University UK	International (with in Country)	Online

11. Paper Presented in International Conference Proceedings

1. **Kavita Sharma** and R.S. Dabas *"Empirical modeling of ionospheric F-region parameters over the Indian zone"* oral presentation at Udaipur Solar Observatory, Physical Research Laboratory, Badi Road, Udaipur during June 26-29, 2009.

2. **Kavita Sharma,** R. S. Dabas, Rupesh M. Das, P. Subramanyam, N. K. Sethi and Sudha Ravidaran *"Study of latitudinal variations of GPS L-band scintillation activity and TEC over equatorial and low latitudes during sunspot minimum"* 15th National Space Science Symposium (NSSS 2008) held at Radio Astronomy Centre NCRA-TIFR Ooty during Feb.25-29,2008 .

3. R. S. Dabas, **Kavita Sharma,** Rupesh M. Das, N.K. Sethi, K.G.M. Pillai and A. K. Mishra, *"Modeling of F-region parameters over Indian zone for HF Communication and other applications"* 15th National Space Science Symposium (NSSS 2008) held at Radio Astronomy Centre NCRA-TIFR Ooty during Feb.25-29, 2008 .

4. **Kavita Sharma,** Rupesh M.Das, R.S. Dabas, and N.K. Sethi "*Ionospheric modeling for*

short and long term predictions of F-region parameters over Indian zone" Paper presented in CAWSES meeting held at NARL, Gadanki, Tirupati, A.P. during May 21-23, 2007

5. **Kavita Sharma,** R. S. Dabas, Rupesh M. Das, N.K. Sethi and S. C. Garg, *"Modeling of F-region parameters using a Multi-variant Regression Analysis over Delhi",* Paper presented in INCURSI-2007, held at NPL, New Delhi during Feb. 21-24,2007.

6. **Kavita Sharma,** Rupesh M. Das, R.S. Dabas, K. G. M. Pillai and S. C. Garg, *"Ionospheric Precursors observed at low latitudes F-region Ionosphere during Koyna Earthquake",* Paper presented in 36thcospar scientific assembly, held at Beijing China during July 16-23,2006.

7. Rupesh M. Das, **Kavita Sharma,** R.S. Dabas, H. N. Dutta, K. G. M. Pillai and S.C. Garg, *"Anomalous F-region variations over Delhi, few days before, the main shock of the recent major earthquakes",* Paper presented in 36thcospar scientific assembly, held at Beijing China during July 16-23,2006.

8. R. S. Dabas, **Kavita Sharma,** Rupesh M. Das, N.K. Sethi and S. C. Garg,' *"Ionospheric Modeling using a Multi-variant Regression Analysis over Delhi",* Space Weather Conference' held at Boulder, Colorado, USA during April 24-27, 2007.

9. R. S. Dabas, Parvati Chopra, **Kavita Sharma,** K.G.M. Pillai and N.K. Sethi, *"A Prediction of Solar Cycle 24 using a Modified Precursor Method"*, 'Space Weather Conference' held at Boulder, Colorado, USA during April 24-27, 2007.

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