Dr. Karanam Kishore Kumar
Scientist/Engineer – SG,
Head, Atmospheric Dynamics Branch
Space Physics Laboratory,
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Research Area: Atmospheric Dynamics

Middle Atmospheric Dynamics: Middle atmospheric circulation**,** long period oscillations in earth's middle atmosphere, atmospheric gravity waves, tides, planetary waves, wave-mean flow interactions, wave-wave interactions, wave momentum flux, wave drag, source mechanisms of atmospheric waves, parameterization of gravity waves in global models and numerical modeling aspects of middle atmospheric dynamics

Lower Atmospheric Dynamics: Large-scale circulations and their drivers in the earth's lower atmosphere, Jet streams, atmospheric convection and associated dynamics, latent heat distributions in clouds and their role in driving mesoscale and global scale circulation, long-term trends in geophysical parameters and possible implications on climate.

Experimental Techniques/Retrieval Algorithms: Radar and Lidar remote sensing, Design and development of atmospheric radars' signal processing algorithms, developing inversion algorithms for geophysical parameter retrievals, sounding Rocket experiments and pay-load development for atmospheric observations from space

Academic Qualification

Degree	Year	Details
• Ph.D.	2004	Physics, Thesis Title: "**Studies on Tropical Mesoscale Convective Systems and Associated Atmospheric Dynamics using VHF and UHF Radars,** National Atmosphere Research Laboratory, Gadanki (Degree Awarded by Sri Venkateswara University, Tirupati).
• M. Sc. Tech	1998	Engineering Physics, Sri Venkateswara University, Tirupati

Professional Background

Designation	Duration	Institution
• Scientist	April 2004– Present	Space Physics Laboratory, VSSC, ISRO, India

Awards/Honors/Recognitions/Acclamations

- Indian National Science Academy (INSA) Young scientist Medal for the year 2010
- Institution of Electronics and Telecommunication Engineers (IETE) Young scientist award -2010
- International Union of Radio science (URSI) Young Scientist Award-2008
- Certificate for Excellency in reviewing from the 'Journal of Atmospheric and Solar-Terrestrial Physics'
- Certificate for outstanding contributions in reviewing from the journal 'Atmospheric Research'
- Best oral paper by a young scientist award at MST11 international workshop-2006
- Best Paper award at National Space Science Symposium-2012
- Best Paper award at International conference on Opportunities and Challenges in monsoon variability and predictability-2012
- Best paper award at International Tropical Meteorology (INTROMET)-2014
- Best paper award at TROPMET-2015
- Best Paper award at National Space Science Symposium-2016
- Best paper award at TROPMET-2018
- P. Krishna Rao award for Application of Satellite Remote sensing in Meteorology-2019
- Best Paper award at National Space Science Symposium-2019
- Best Paper award at Inida Radar Meteorology-2019
- Best Paper award at e-symposium on Cloud and Precipitation Processes-2021
- Invited faculty for Radar Meteorology by ICTP School, Botswana, 2007
- University Gold Medalist in post-graduation (M.Sc.Tech. Engineering Physics)-1998
- Topper in National Graduate Physics Examination-1995

Major additional responsibilities

- Chair, Safety Committee, SPL
- Convener, Research Committee for Research Fellows at SPL registered for Ph.D. at Cochin University for Science and Technology
- Convener, Monitoring Committee for Research Fellows and Research Associates at SPL
- Member, Indent Review Committee, SPL
- *Member, Academic Committee, SPL*

Organization of Conferences/Symposia/workshop

- Session chair at COSPAR session CO.2, COSPAR, July, 2012
- Convener for parallel session-2 at National Space Science Symposium (Middle Atmosphere, Atm Coupling, Dynamics and Climate change), National Space Science Symposium, IISER, Kolkata, Jan February 04, 2022
- Co-Convener for parallel session-2 at National Space Science Symposium, Trivandrum, y February,2016
- Co-Convener for parallel session-2 at National Space Science Symposium, Dibrugarh, January 28- 1 February,2014

Research Guidance

- **Sherine Rachel John:** Ph.D.: Studies on Atmospheric Gravity and Planetary Waves in the Earth's Middle Atmosphere using TIMED/SABER Observations, University of Kerala, 2014
- **Subrahmanyam, K.V.**: Ph.D.: Three Dimensional Distribution of Cloud Types over the Indian Region and Associated Dynamics, Cochin University for Science and Technology ,2019
- **Sneha Susan Mathew:** Ph.D.: Poleward Expansion of the Hadley Circulation and Associated Dynamics, Cochin University for Science and Technology ,2019
- **Koushik, N:** Ph.D.: Investigations on the Role of Sudden Stratospheric Warming in High Latitude – Low Latitude Coupling in the Middle Atmosphere, Cochin University for Science and Technology ,2021
- **Dr. Uma K.N.:** Postdoctoral Fellow (2009-2011)
- **Dr. Pramitha M**: Postdoctoral Fellow (2017- 2021)
- **Dr. Ramesh K:** Postdoctoral Fellow (2021- 2022)

Publications in peer-reviewed journals:

1. Mathew, S.S **and Kumar K.K. (2023),** Hadley Circulation Dynamics in the IITM-Earth System Model Simulations: Evaluation and Future Projections, ***Theoretical and Applied Climatology,*** https://doi.org/10.1007/s00704-023-04397-1
2. Anjana, U, Mathew, S.S **and Kumar K.K. (2023),** A rare episode of Minor Circulation Embedded in the Northern Hemispheric Zonal Mean Hadley Cell, ***Journal of Atmospheric and Solar-Terrestrial Physics*****,** Vol.243, 106017
3. Subrahmanyam, K. V and **Kumar, K. K. (2023),** Structure and evolution of organized precipitation bands: C-band Doppler weather radar observations over Thumba (8.5° N, 77° E). ***Atmospheric Research***, 284,106590
4. Subrahmanyam, K. V and **Kumar, K. K. (2023),** Characterization of Deep Convective Cells during the Indian summer monsoon using C-band polarimetric Doppler Weather Radar observations over Thumba (8.5^0 N, 77^0 E), **Remote Sensing Applications: Society and of Environment,** Vol.30, 100956.
5. Prijith S.S. and **Kumar, K.K (2023),** Investigation on the anomalous weakening of diurnal tides in the mesosphere-lower thermosphere. ***Journal of Geophysical Research: Space Physics*** (Accepted for publication)
6. Pramitha, M., Kumar, K.K., and Praveen, M **(2023)**., Long-term variabilities in Thermal Structure, CO_2 Concentration and associated Cooling Rates in the Earth's Middle Atmosphere: Observations and Model Simulations, ***Journal of Atmospheric and Solar-Terrestrial Physics,*** Vol. 246, 106070
7. Koushik N, **Kumar K.K**, Pramitha M **(2022),** A tropical stratopause precursor for sudden stratospheric warnings, **Scientific Reports**. Feb 21; 12(1):2937. doi: 10.1038/s41598-022-06864-7. PMID: 35190610; PMCID: PMC8861060.
8. **Kumar, K.K.,** K.V. Subrahmanyam, B. Suneel Kumar, K.V. Suneeth, M. Pramitha, N. Koushik, N. Nagendra and G. S. Peter **(2022),** Balloon Borne Experiment for Quasi-Lagrangian Frame of Reference Measurements of Intrinsic Frequency Spectrum of Gravity Waves in the Stratosphere**, Current Science**, Vol.122, issue 1, p.98-103
9. Subrahmanyam, K. V. and **Kumar, K. K**. **(2022),** Diurnal evolution of orographic precipitating clouds over the southernmost part of the Western Ghats of India during summer and winter monsoons. **International Journal of Climatology**, 1-16, https://doi.org/10.1002/joc.7635

10. Subrahmanyam, K. V and **Kumar, K. K. (2022),** C-band Polarimetric Doppler Weather Radar observations during an extreme precipitation event and associated dynamics over Peninsular India, **Natural Hazards**, https://doi.org/10.1007/s11069-022-05426-4
11. **Kumar, K.K. (2021)**, Is mesospheric Quasi-biennial Oscillation ephemeral? ***Geophysical Research Letters***, https://doi.org/10.1029/2020GL091033
12. Pramitha, M., **Kumar, K.K.**, Venkat Ratnam, M., Praveen, M., & Rao, S. V. B. **(2021),** Disrupted stratospheric QBO signatures in the diurnal tides over the low-latitude MLT region. ***Geophysical Research Letters*****,** 48, e2021GL093022. https://doi.org/10.1029/2021GL093022
13. Pramitha, M., **Kumar, K.K.,** Venkat Ratnam, M., Praveen, M., & Rao, S. V. B**. (2021),** Stratospheric Quasi Biennial Oscillation Modulations of Migrating Diurnal tide in the Mesosphere and Lower Thermosphere over the Low and Equatorial Latitudes. Journal of Geophysical Research: Space Physics, 126, e2020JA028970. https://doi.org/10.1029/2020JA028970
14. Pramitha, M., **K.K. Kumar**, M.V. Ratnam, **(2021),** Observations and Model Predictions of Vertical wavenumber spectra of gravity waves in the troposphere and lower stratosphere over a tropical station, ***Journal of Atmospheric and Solar-Terrestrial Physics*** (In Press)
15. **Kumar, K.K.,** Subrahmanyam, K.V., Kumar, C.P., Shanmugasundari, J., Koushik, N., Ajith, R.P. & Devi, L.G.**(2020)**, C-band dual-polarization Doppler weather radar at Thumba (8.537°N, 76.865°E): initial results and validation, ***Journal of Applied Remote sensing***, Vol. 14(4), DOI: 10.1117/1.JRS.14.044509
16. Pramitha, M., **Kumar, K. K**., Ratnam, M. V., Praveen, M., &Rao, S. V. B. (2020). Gravity wave source spectra appropriation for mesosphere lower thermosphere using meteor radar observations and GROGRAT model simulations. ***Geophysical Research Letters***, 47, e2020GL089390. https://doi.org/10.1029/2020GL089390
17. Koushik, N., **K. K. Kumar,** Tarique A. Siddiqui **(2020),** Westward Acceleration of Tropical Stratopause Zonal Winds during Major Sudden Stratospheric Warming Events, ***Geophysical Research Letters***, 47, e2019GL086857 https://doi.org/10.1029/2019GL086857
18. Koushik, N., **K.K. Kumar**, C. Vineeth, G. Ramkumar, & K.V. Subrahmanyam **(2020),** Meteor radar observations of lunar semidiurnal oscillations in the mesosphere lower thermosphere over low and equatorial latitudes and their variability during sudden stratospheric warming events. ***Journal of Geophysical Research: Space Physics*****,** *125*, e2019JA027736. https://doi.org/ 10.1029/2019JA02773
19. Koushik, N., **K. K. Kumar**, G. Ramkumar, K. V. Subrahmanyam, G. Kishore Kumar, W. K. Hocking, M. He, R. Latteck **(2020),** Planetary waves in the Mesosphere Lower Thermosphere during Stratospheric Sudden Warming: Observations using a network of meteor radars from high to equatorial latitudes, ***Climate Dynamics,*** https://doi.org/10.1007/s00382-020-05214-5
20. Subrahmanyam, K. V. and **Kumar, K.K. (2020),** The vertical structure of latent heating and its association with cloud types during the Indian summer monsoon, ***Remote Sensing Letters,*** https://doi.org/10.1080/2150704X.2020.1820615
21. Pramitha, M., **K.K. Kumar**, M.V. Ratnam, M. Praveen, & S.V.B Rao, **(2020).** Gravity wave source spectra appropriation for mesosphere lower thermosphere using meteor radar observations and GROGRAT model simulations**,** ***Geophysical Research Letter*****s**, 47, e2020GL089390. https://doi. org/10.1029/2020GL089390
22. Ramesh, K., Smith, A. K., Garcia, R. R., Marsh, D. R., Sridharan, S., & **Kishore Kumar, K. (2020)**, Long-term variability and tendencies in migrating diurnal tide from WACCM6 simulations during 1850–2014. ***Journal of Geophysical Research: Atmospheres***, *125*, e2020JD033644. https://doi.org/ 10.1029/2020JD033644
23. Ramesh, K., Smith, A. K., Garcia, R. R., Marsh, D. R., Sridharan, S., & **Kishore Kumar, K. (2020),** Long-Term Variability and Tendencies in Middle Atmosphere Temperature and Zonal Wind from

WACCM6 Simulations during 1850-2014, ***Journal of Geophysical Research: Atmospheres****, 125*, e2020JD033579. https://doi.org/ 10.1029/2020JD033579

24. Krishnaprasad, C., Thampi, S. V., Bhardwaj, A., Lee, C. O., **Kumar, K. K**., & Pant, T. K. **(2020),** Recurrent Solar Energetic Particle Flux Enhancements Observed near Earth and Mars. ***The Astrophysical Journal***, 902(1), 13.https://doi.org/10.3847%2F1538-4357%2Fabb137

25. Jose, L., Vineeth, C., Pant, T. K., & **Kumar, K. K**. **(2020)**, Response of the Equatorial Ionosphere to the Annular Solar Eclipse of 15 January 2010. ***Journal of Geophysical Research: Space Physics***, 125(8), e2019JA027348. https://doi.org/10.1029/2019JA027348
26. Pramitha, M., **K.K Kumar**, Ratnam, M. V., Rao, S. V. B., &Ramkumar, G. **(2019).** Meteor radar estimations of gravity wave momentum fluxes: Evaluation using simulations and observations over three tropical locations**. Journal of Geophysical Research: Space Physics**, 124, 7184–7201. https://doi.org/10.1029/2019JA026510
27. Koushik, N., **K.K Kumar**, Subrahmanyam, K.V. *et al.* Characterization of inertia gravity waves and associated dynamics in the lower stratosphere over the Indian Antarctic station, Bharati (69.4°S, 76.2°E) during austral summers. ***Clim Dyn,*** **53,** 2887–2903 (2019). https://doi.org/10.1007/s00382-019-04665-9
28. Mathew, S.S and **K.K. Kumar (2019),** Characterization of the long-term changes in moisture, clouds and precipitation in the ascending and descending branches of the Hadley circulation, ***Journal of Hydrology,*** *(accepted for publication)*
29. Yadav S, C. Vineeth, **K. K. Kumar**, R. K. Choudhary, T. K. Pant, S. Sunda **(2019)** , The role of the phase of QBO in modulating the influence of the SSW effect on the Equatorial Ionosphere, **Journal of Geophysical Research: Space Physics**, http://dx.doi.org/ 10.1029/2019JA026518).
30. Uma, K. N., S.S. Das , K. K. Kumar, K. V. Subrahmanyam, G. Ramkumar ,(**2019),**Characterization of internal inertia gravity wave over the low latitude: results from the RONAC-2012 campaign, **Meteorology and Atmospheric Physics**, 131, 1605- 1616, doi : 10.1007/s00703-019-0658-1
31. Mridula N, T.K. Pant, Manju G, K V Subrahmanyam and **K.K. Kumar (2019),** On the role of F3 layers as well as solar flux in modulating the topside ionization over Indian region:an analysis, Journal of Atmospheric and Solar-Terrestrial Physics, 189, 52-64, doi:10.1016/j.jastp.2019.04.004
32. Niranjan Kumar, K., D.V. Phanikumar, S. Sharma, G. Basha, M. Naja, T.B.M.J. Ouarda, M.V. Ratnam, **K. Kishore Kumar (2019),** Influence of tropical-extratropical interactions on the dynamics of extreme rainfall event: A case study from Indian region, **Dynamics of Atmospheres and Oceans**, Volume 85,Pages 28-40, https://doi.org/10.1016/j.dynatmoce.2018.12.002.
33. Maurya, A. K., Cohen, M. B., Niranjan Kumar, K., Phanikumar, D. V., Singh, R., Vineeth, P. K., & **Kishore Kumar, K**. **(2019),** Observation of very short period atmospheric gravity waves in the lower ionosphere using very low frequency waves. **Journal of Geophysical Research: Space Physics**, 124, 9448-9461, https:// doi.org/10.1029/2019JA027360
34. Shukla, K.K., D Phanikumar, K. Niranjan Kumar, N. Singh, N. Ojha, R.K. Newsom, S. K. Sharma, V. Kotamarthi, K. Kishore Kumar **(2019),** Investigations of vertical wind variations at a mountain top in the Himalaya using Doppler Lidar observations and model simulations, **Journal of Atmospheric and Solar-Terrestrial Physics**, 183, 76-85, doi : 10.1016/j.jastp.2018.12.011.
35. Mathew, S.S and **K.K. Kumar (2018),** Estimation of Zonally Resolved Edges of the Tropical Belt Using GPS-RO Measurements, ***IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing***, 10.1109/JSTARS.2018.2828342.
36. **Kumar, K.K**, S.S. Mathew, & K.V. Subrahmanyam, **(2018)**, Anomalous tropical planetary wave activity during 2015/2016 quasi biennial oscillation disruption, ***Journal of Atmospheric and Solar-Terrestrial Physics***, Vol., 167, pp. 184-189, 10.1016/j.jastp.2017.12.004.

37. Mathew, S.S and **K.K. Kumar (2018),** On the role of precipitation latent heating in modulating the strength and width of the Hadley Circulation, ***Theoretical and Applied Climatolog,*** DOI: 10.1007/s00704-018-2515-4
38. Subrahmanyam, K. V., **K.K.Kumar** & D. Tourville, Natalie. **(2018),** CloudSat Observations of Three-Dimensional Distribution of Cloud Types in Tropical Cyclones. ***IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing.*** PP. 1-6. 10.1109/JSTARS.2017.2786666.
39. Subrahmanyam, K.V and **K. K. Kumar (2018),** Vertical structure of stratocumulus clouds and associated dynamics over the Arabian Sea during Indian summer monsoon season, J**. Appl. Remote Sens.** 12(1), 016018 (2018), doi: 10.1117/1.JRS.12.016018.
40. Koushik, N, **K. K. Kumar**, G. Ramkumar and K.V. Subrahmanyam **(2018),** Response of equatorial and low latitude mesosphere lower thermospheric dynamics to the northern hemispheric sudden stratospheric warming events. ***Journal of Atmospheric and Solar-Terrestrial Physics.*** doi:10.1016/j.jastp.2018.01.021.
41. Subrahmanyam, K.V. and ***K.K. Kumar*** **(2018),** New insights into the convective system characteristics over the Indian summer monsoon region using space based passive and active remote sensing techniques, ***IETE Technical Review*** (in press)
42. Premkumar,B., K. Chenna Reddy, G. Yellaiah, **K. Kishore Kumar (2018)**, Seasonal variations in vertical distribution of meteor decay time as observed from meteor radars at 8.5Â°N and 80Â°N, **Advances in Space Research**, https://doi.org/10.1016/j.asr.2018.11.019.
43. Ajesh, A., T.K. Pant, C. Vineeth, N. Mridula, **K.K. Kumar (2018),** Vertical coupling between the mesopause region and sporadic-E layer during equatorial counter electrojet events – A case study, ***Adv. Space Res.,***, Volume 62, Issue 7, Pages 1787-1799.
44. Ando, H., Takagi, M., Fukuhara, T., Imamura, T., Sugimoto, N., Sagawa, H., Noguchi, K., Tellmann, S., P¨atzold, M., H¨ausler, B., Murata, Y., Takeuchi, H., Yamazaki, A., Toda, T., Tomiki, A., Choudhary, R.K**., Kishore Kumar**, Ramkumar, G., Antonita, M., **(2018),** Local time dependence of the thermal structure in the Venusian equatorial upper atmosphere: Comparison of Akatsuki radio occultation measurements and GCM results, ***Journal of Geophysical Research:*** **Planets,** https://doi.org/10.1029/2018JE005640
45. **Kumar, K.K,** K.V. Subrahmanyam, S.S. Mathew, N. Koushik & G. Ramkumar**, (2017),** Simultaneous observations of the quasi 2-day wave climatology over the low and equatorial latitudes in the mesosphere lower thermosphere, ***Climate Dynamics***. 1-13. 10.1007/s00382-017-3916-2.
46. Subrahmanyam, K.V. and ***K.K. Kumar*** **(2017),** CloudSat observations of multilayer clouds across globe, ***Climate Dynamics,*** DOI 10.1007/s00382-016-3345-7
47. Yadav, Sneha, T.K. Pant, R.K. Choudhary, C. Vineeth, S. Sunda, **K.K. Kumar**, R. Shreedevi & S. Mukherjee, **(2017),** Impact of Sudden Stratospheric Warming of 2009 on the Equatorial and Low-Latitude Ionosphere of the Indian Longitudes: A Case Study. ***Journal of Geophysical Research: Space Physics***, 10.1002/2017ja024392.
48. Selvaraj D, A.K. Patra, S. Sathishkumar and **K. K. Kumar** and D.N. Rao. (2016). On the governing dynamics of the VHF radar echoes from the mesosphere and collision dominated lower E region over Gadanki (13.5°N, 79.2°E). **Journal of Geophysical Research: Space Physics**, 10.1002/2016JA023297.
49. John, S.R. and ***K.K. Kumar*** **(2016),** Global normal mode planetary activity: a study using TIMED/SABER observations from the stratosphere to the mesosphere lower thermosphere**,** ***Climate Dynamics,*** DOI 10. 1007/s00382-016-3046-2
50. John, S.R. and ***K.K. Kumar*** **(2016),** HIRDLS observations of global gravity wave absolute momentum fluxes: A wavelet based approach, ***J. Atoms. Solar Terr.,*** http://dx.doi.org/10.1016/j.jastp.2015.12.004

51. Mathew S.S., ***K.K. Kumar*** and K.V. Subrahmanyam **(2016**), Hadley cell dynamics in Japanese Reanalysis-55 dataset: evaluation using other reanalysis datasets and global radiosonde network observations, ***Climate Dynamics,*** DOI 10.1007/s00382-016-3051-5
52. Subrahmanyam, K.V., ***K.K. Kumar***, N.V.P. Kiran Kumar and G. Viswanathan **(2016),** Evaluation of Doppler Weather Radar MEGHA-2700 Observations Using Gematronik Doppler Weather Radar and TRMM Precipitation Radar, ***Meteorological Applications***, (***In press***)
53. Vineeth, C., N. Mridula, P. Muralikrishna, ***K. K. Kumar*** and T.K. Pant **(2016)**, First Observational Evidence for the Connection between the Meteoric Activity and Occurrence of Equatorial Counter Electrojet, ***Journal of Atmospheric and Solar-Terrestrial Physics***, doi:10.1016/j.jastp.2016.07.007
54. Das, S.S., M. V. Ratnam, K. N. Uma, A. K. Patra, K. V. Subrahmanyam, I. A. Girach, K.V. Suneeth, ***K. K. Kumar*** and G. Ramkumar **(2016),** Stratospheric intrusion into the troposphere during the tropical cyclone Nilam, ***Quarterly Journal of Royal Meteorological Society***, doi: 10.1002/qj.2810.
55. Das, S.S., M. V. Ratnam, K. N. Uma, K. V. Subrahmanyam, I.A. Girach, A. K. Patra, S. Aneesh, K.V. Suneeth, ***K. K. Kumar***, A.P. Kesarkar, S. Sijikumar and G. Ramkumar**(2016)**, Influence of Tropical Cyclones on Tropospheric Ozone: Possible Implications, ***Atmospheric Chemistry and Physics***, 16, 1-11, doi :10.5194/acp-16-1-2016.
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63. Das, S.S., **K. K. Kumar**, K. N. Uma, M. V. Ratnam, A. K. Patra, S. K. Das, A. K. Ghosh, and A. R. Jain **(2014),** Modulation of thermal structure in the upper troposphere and lower stratosphere (UTLS) region by inertia-gravity waves : A case study inferred from simultaneous MST radar

and GPS sonde observations, ***Ind. J. Radio. Space Phys***., 43, 2014, PACS No. 92.60.hd;92.60.hf,92.60.hh

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69. Subrahmanyam, K.V., and ***K. K. Kumar*** **(2013),** CloudSat observations of cloud-type distribution over the Indian summer monsoon region, *Ann. Geophys.,* 31, 1155–1162, doi: 10.5194/angeo-31-1-2013.
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अनुसंधान क्षेत्र: वायुमंडलीय गतिकी

मध्य वायुमंडलीय गतिकी: मध्य वायुमंडलीय परिसंचरण, पृथ्वी के मध्य वायुमंडल में लंबी अव ध के दोलन, वायुमंडलीय गुरुत्वाकर्षण तरंगें, ज्वार, ग्रह तरंगें, तरंग-माध्य प्रवाह अंतः क्रयाएं, तरंग-तरंग अंतः क्रयाएं, तरंग गति प्रवाह, तरंग ड्रैग, वायुमंडलीय तरंगों के स्रोत तंत्र, गुरुत्वाकर्षण तरंगों का मानकीकरण मध्य वायुमंडलीय गतिकी के वैश्विक मॉडल और संख्यात्मक मॉड लंग पहलू

निचला वायुमंडलीय गतिकी: पृथ्वी के निचले वायुमंडल में बड़े पैमाने पर परिसंचरण और उनके चालक, जेट धाराएं, वायुमंडलीय संवहन और संबं धत गतिशीलता, बादलों में गुप्त गर्मी वतरण और मेसोस्केल और वैश्विक स्तर के परिसंचरण को चलाने में उनकी भू मका, भूभौतिकीय मानकों में दीर्घका लक रुझान और जलवायु पर संभा वत प्रभाव.

प्रायो गक तकनीक/पुनर्प्राप्ति एल्गोरिदम: रडार और लडार रिमोट सें संग, वायुमंडलीय रडार के सग्नल प्रोसे संग एल्गोरिदम का **रचना** और वकास, भूभौतिकीय पैरामीटर पुनर्प्राप्ति के लए एल्गोरिदम वक सत करना, रॉकेट प्रयोग और अंतरिक्ष से वायुमंडलीय अवलोकन के लए पे-लोड वकास

शैक्ष णक योग्यता

डग्री	वर्ष	ववरण
• पी एचडी	2004	भौतिक वज्ञान; शोधग्रंथ का शीर्षक: वीएचएफ और यूएचएफ रडार का उपयोग करके उष्णकटिबंधीय मेसोस्केल संवहन प्रणा लयों और उनके संबद्ध वायुमंडलीय गतिशीलता पर अध्ययन, राष्ट्रीय वायुमंडल अनुसंधान प्रयोगशाला, **गादंकी** (श्री वेंकटेश्वर वश्व वद्यालय, तिरुपति द्वारा सम्मानित डग्री)

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पेशेवर पृष्ठभू म

पद	समयांतराल	संस्थान
• वैज्ञानिक	अप्रैल 2004– वर्तमान	अंतरिक्ष भौतिकी प्रयोगशाला, वीएसएससी, इसरो, भारत

पुरस्कार/सम्मान/स्वीकरन/अ भनंदन

- भारतीय राष्ट्रीय वज्ञान अकादमी (आईएनएसए) युवा वैज्ञानिक पदक -2010
- इलेक्ट्रॉनिक्स और दूरसंचार इंजीनियर संस्थान (आईईटीई) युवा वैज्ञानिक पुरस्कार -2010
- इंटरनेशनल यूनियन ऑफ रे डयो साइंस (यूआरएसआई) युवा वैज्ञानिक पुरस्कार-2008
- 'जर्नल ऑफ एटमॉस्फेरिक एंड सोलर-टेरेस्ट्रियल फजिक्स' से समीक्षा में उत्कृष्टता के लए प्रमाण पत्र
- 'वायुमंडलीय अनुसंधान' पत्रिका से समीक्षा में उत्कृष्ट योगदान के लए प्रमाण पत्र
- एमएसटी11 अंतर्राष्ट्रीय कार्यशाला-2006 में सर्वश्रेष्ठ मौ खक पत्र पुरस्कार
- राष्ट्रीय अंतरिक्ष वज्ञान संगोष्ठी-2012 में सर्वश्रेष्ठ पत्र पुरस्कार
- मानसून परिवर्तनशीलता और पूर्वानुमेयता में अवसरों और चुनौतियों पर अंतर्राष्ट्रीय सम्मेलन में सर्वश्रेष्ठ पत्र पुरस्कार-2012
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