

Kiran Kumar NVP

Scientist/Engineer – SF

Phone: +91-471-2563927

Email: kirankumar_nvp[at]vssc[dot]gov[dot]in

Research Area: Atmospheric Boundary layer and Precipitation studies.

Academic Qualification

Degree	Year	Details
• Ph.D.	2007	Physics, Thesis Title: “ <i>Studies on tropical precipitating systems using VHF and UHF radars</i> ”, Sri Venkateswara University, Tirupati, India. Thesis advisor: Dr. D. Narayana Rao
• M. Sc.	1999	M.Sc (Tech) Engg. Physics, Sri Venkateswara University, Tirupati, India.

Professional Background

Designation	Duration	Institution
• Scientist	Mar 2006– Present	Space Physics Laboratory, VSSC, ISRO, India
• Research Scholar	Jan 2000– Mar 2002	Sri Venkateswara University, Tirupati, India
	Mar 2002– Mar 2006	National Atmospheric Research Laboratory, Gadanki, India

Awards/Honors/Recognitions/Aclamations

- Best Paper Award -2014 in 18th National Space Science Symposium (NSSS-2014), Dibrugarh University, Dibrugarh, Assam
- Gold Medal in M.Sc (Tech) Engg. Physics – 1999 from Sri Venkateswara University, Tirupati

Major additional responsibilities

- Co-Principal Scientist, NOBLE (Network of Observatories for Boundary Layer Experiments) project under ISRO-GBP program
- Chair, Furniture Committee, SPL
- Member, Academic Committee, SPL

Fellowship in professional bodies

- Associate Fellow of A.P. Akademi of Sciences-2020

Organization of Conferences/Symposia/workshop

- Co-convenor: Session on 'Space based Meteorology, Oceanography, Geosphere-Biosphere interactions', 21st National Space Science Symposium (NSSS-2022), 31 January to 4 February 2022, IISER Kolkata.
- Co-Chair, PS1-Meteorology, Oceanography, Geosphere-Biosphere Interaction, NSSS-2019, 29 -31 January, 2019, Pune University, Pune

Research Guidance

- | | | |
|---|---|----|
| • Ph.D. Thesis Supervisor | : | 01 |
| • Research Associate (NPDF: DST-SERB project) | : | 01 |

Specific Scientific/Technical contributions

- In the capacity of Co-Principal Investigator of NOBLE (Network of Boundary Layer Experiments) project, I played a pivotal role in the identification of network stations, co-investigators and suitable experimental sites. Extensively involved in the setting up of the boundary layer instruments, day to day functioning, development of algorithms for scientific data analysis and archiving the data recorded from all network stations. Presently 08 operational stations at different geographical locations like coastal, complex terrains and semi-arid regions of India. In addition, I contributed significantly in the field of precipitation studies both inland and coastal regions using ground-based instruments and radars. Quantified and established i) Reflectivity (Z) -rainrate (R) relationship ii) rain Drop size distribution (DSD) parameters and iii) gamma distribution parameters for three different seasons over coastal region Thumba.

Publications

1. Neha Shaikh Salim, Harilal B. Menon, **N. V. P. KiranKumar**, K. Rajeev, Study of micrometeorological characteristics of the atmospheric surface layer over a tropical coastal station in Goa. **Meteorology and Atmospheric Physics**,135,3, <https://doi.org/10.1007/s00703-022-00940-3>, 2023.
2. Neha Shaikh Salim, Arjun Adhikari, Atiba A. Shaikh, Harilal B. Menon, **N. V. P. KiranKumar**, K. Rajeev, Aerosol-boundary layer dynamics and its effect on aerosol radiative forcing and atmospheric heating rate in the Indian Ocean sector of Southern Ocean. **Science of The Total Environment**, 858: 159770, <http://dx.doi.org/10.1016/j.scitotenv.2022.159770>, 2023.
3. Neha Shaikh Salim, Arjun Adhikari, Harilal B. Menon, **N. V. P. KiranKumar**, K. Rajeev, Thermodynamic characteristics of Marine Atmospheric Boundary Layer across Frontal Regions of the Indian Ocean Sector of Southern Ocean up to Prydz Bay region of Antarctica (24°S to 67°S) based on Three Field Campaigns, **Atmospheric Research**, 286, 106678, <https://doi.org/10.1016/j.atmosres.2023.106678>, 2023
4. Jaydeep Singh, Narendra Singh, Narendra Ojha, A. K. Srivastava, Dewan Singh Bisht, Amit Sharma, Andrea Pozzer, K Rajeev, **Nadimpally KiranKumar**, Ravi S. Singh, Vivek Panwar, S. K. Dhaka, Vinay Kumar, Tomoki Nakayama, Yutaka Matsumi, Sachiko Hayoshida, A. P. Dimri, Genesis of a Severe Dust Storm over the Indian Subcontinent: Dynamics and Impacts, **Earth and Space Science**, 9, e2021EA001702,<https://doi.org/10.1029/2021EA001702>, 2022.
5. Lavanya S, **Kiran Kumar NVP**, "Classification of tropical coastal precipitating cloud systems using disdrometer observations over Thumba, India", **Atmospheric Research**, 253, <https://doi.org/10.1016/j.atmosres.2021.105477>, 2021

6. N. Siva Kumar Reddy, **N.V.P. KiranKumar**, K. Rama Gopal, G. Balakrishnaiah, and K. Rajaobul Reddy, Characteristics of atmospheric surface layer during winter season over Anantapur (14.62° N, 77.65° E), a semi-arid location in peninsular India, *Journal of Atmospheric and Solar-Terrestrial Physics*, 216, 2021, <https://doi.org/10.1016/j.jastp.2021>
7. Kaustav Chakravarty, Shraddha Khandare, **N.V.P. KiranKumar** and Animesh Maitra. Unraveling the features of precipitation microphysics over two tropical stations of India that experiences different characteristics of Indian summer monsoon, *Journal of Atmospheric and Solar-Terrestrial Physics*, 2021, <https://doi.org/10.1016/j.jastp.2021.105710>
8. Nilamoni Barman, Arup Borgohain, Shyam S. Kundu , **N. V. P. Kiran Kumar**, "Seasonal variation of mountain-valley wind circulation and surface layer parameters over the mountainous terrain of the northeastern region of India", *Theor Appl Climatol.*, <https://doi.org/10.1007/s00704-020-03491-y>, 2021
9. Jaydeep Singh, Narendra Singh, Narendra Ojha, Amit Sharma, Andrea Pozzer, **Nadimpally KiranKumar**, Kunjukrishnapillai Rajeev, Sachin S. Gunthe, V. Rao Kotamarthi, Effects of spatial resolution on WRF v3.8.1 simulated meteorology over the central Himalaya, Geoscientific-Model-Development, *Geoscientific-Model-Development*, 14, 1427–1443, 2021, <https://doi.org/10.5194/gmd-14-1427-2021>
10. Subrahmanyam, K. V. and **N.V.P. Kirankumar**, Characteristics of Mesoscale Convective Systems over the Indian summer monsoon using IRBRT data, Science Spectrum: *Quarterly Journal of AP Akedamy of Science*, 2020, ISSN no. 2455-5053.2020S.
11. Lavanya S., **N.V.P. Kirankumar**, S. Aneesh, K.V. Subrahmanyam, S. Sijkumar, "Seasonal variation of raindrop size distribution over a coastal station Thumba: A quantitative analysis", *Atmospheric Research*, ISSN 0169-8095, <https://doi.org/10.1016/j.atmosres.2019.06.004>, 2019
12. Nilamoni Barman, Arup Borgohain, S.S. Kundu, Rakesh Roy, Biswajit Saha, Raman Solanki, **N.V.P. Kiran Kumar**, P.L.N Raju, "Daytime temporal variation of surface-layer parameters and turbulent kinetic energy budget in a topographically complex terrain over Uiam", *Boundary Layer Meteorology*, 172, 1, 149-166. <https://doi.org/10.1007/s10546-019-00443-6>, 2019
13. Nilamoni Barman, Arup Borgohain, S.S. Kundu, Biswajit Saha, Rakesh Roy, Raman Solanki, **N.V.P. Kiran Kumar**, P.L.N Raju, "Impact of atmospheric conditions in surface-air exchange of energy in a topographically complex terrain over Uiam", *Meteorol Atmos Phys*, pp 1-14, <https://doi.org/10.1007/s00703-019-00668-7>, 2019
14. Raman Solanki, Narendra Singh, **N. V. P. Kiran Kumar**, K. Rajeev, Ryoichi Imasu, S. K. Dhaka, "Impact of Mountainous Topography on Surface-Layer Parameters During Weak Mean-Flow Conditions", *Boundary Layer Meteorology* <https://doi.org/10.1007/s10546-019-00438-3>, 2019
15. **Kiran Kumar N.V.P.**, K. Jagadeesh, K. Niranjana, K. Rajeev, "Seasonal variations of sea breeze and its effect on the spectral behaviour of surface layer winds in the coastal zone near Visakhapatnam, India", *Journal of Atmospheric and Solar-Terrestrial Physics*, ISSN 1364-6826, <https://doi.org/10.1016/j.jastp.2019.01.013>, 2019.
16. Renju R., C. Suresh Raju, Nizy Mathew, **N. V. P. Kirankumar**, and K. Krishna Moorthy, Tropical Convective Cloud Characterization Using Ground-Based Microwave Radiometric Observations", *IEEE Trans. Geosci. Remote & Sensing*, Vol. 54, Issue 6, doi:10.1109/TGRS.2016.2527099, 2016.
17. Chandrika, P., S. VijayaBhaskara Rao, **N.V.P. KiranKumar** and T. Narayana Rao , "Validation of Empirical Rainrate Models over a Tropical Coastal Station and an Inland Station in Southern India", *IEEE Antennas and Wireless Propagation Letters*, Vol. 15, 698-701, doi:10.1109/LAWP.2015.2469721, 2016.
18. Subrahmanyam K. V., Karanam Kishore Kumar, **N.V.P. KiranKumar** and G. Viswanathan, "Evaluation of Doppler Weather Radar MEGHA-2700 Observations Using Gematronik Doppler Weather Radar and TRMM Precipitation Radar", *Meteorological Applications*, doi:10.1002/met.1571, 2016.

19. Arun K Dwivedi, Sagarika Chandra, Manoj Kumar, Sanjay Kumar, **N.V.P. Kirankumar**, "Spectral Analysis of Wind and Temperature Components during Lightning in Pre-Monsoon Season over Ranchi", *Meteorology and Atmospheric Physics*, 127, 95-105, doi:10.1007/s00703-014-0346-0, 2015.
20. Chandrika P, S Vijaya Bhaskara Rao, **N.V.P. Kirankumar**, T. Narayana Rao, "Review and testing analysis of Moupfouma rain rate model for Southern India", *Journal of Atmospheric and Solar-Terrestrial Physics*, 132, 33-36, doi.org/10.1016/j.jastp.2015.06.010, 2015.
21. Raman Solanki, Narendra Singh, **N.V.P. Kiran Kumar**, K. Rajeev and S. K. Dhaka, "Time Variability of surface-layer characteristics over a mountain ridge in the central Himalayas during the spring season", *Boundary Layer Meteorology*, doi.org/10.1007/s10546-015-0098-5, 2015.
22. Nair S.K., Thara Prabhakaran, Neethu Purushothaman, S. Sijikumar, **N.V.P. Kirankumar**, S. Muralidharan, D.B. Subrahmanyam, T.J. Anurose, S.S. Prijith, K.V.S. Namboodiri, "Diurnal variation of low-level jet characteristics during the onset phase of Asian Summer Monsoon over Peninsular India", *Theoretical and Applied Climatology*, 287-298, doi.org/10.1007/s00704-014-1168-1, 2015.
23. Arun K Dwivedi, Sagarika Chandra, Manoj Kumar, Sanjay Kumar, **N.V.P. Kirankumar**, "Atmospheric Surface layer responses to the extreme lightning day in Plateau region in India", *Journal of Atmospheric and Solar-Terrestrial Physics*, doi:10.1016/j.jastp.2014.08.003, 2014
24. Arun K Dwivedi, Sagarika Chandra, Manoj Kumar, Sanjay Kumar, **N.V.P. Kirankumar**, "Spectral Analysis of Wind and Temperature Components during Lightning in Pre-Monsoon Season over Ranchi", *Meteorology and Atmospheric Physics*, doi:10.1007/s00703-014-0346-0, 2014.
25. Kompalli S. K., S. Suresh Babu, K. Krishna Moorthy, M.R. Manoj, **N.V.P. Kirankumar**, K. Hareef Baba Shaeb, Ashok Kumar Joshi, "Aerosol Black Carbon characteristics over Central India: Temporal variation and its dependence on mixed layer height", *Atmospheric Research*, <http://dx.doi.org/10.1016/j.atmosres.2014.04.015>, 2014
26. Namboodiri, K. V. S., P K Dileep, Rahul Karunakaran Nileshwar, Koshy Mammen and **N V P Kirankumar**, "Coastal Boundary Layer Characteristics of Wind, Turbulence and Surface Roughness Parameter (Z0) over the Thumba Equatorial Rocket Launching Station (TERLS), India", *Journal of Climatology*, Vol. 2014, Article ID 504178, <http://dx.doi.org/10.1155/2014/5041782014>, 2014
27. **Kirankumar, N. V. P.**, Neethu Purushothaman and M. Santosh, "Response of spectral characteristics of wind and temperature of atmospheric surface layer to the noontime annular solar eclipse", *Journal of Atmospheric and Solar-Terrestrial Physics*, 97, 91-98, 2013. (<http://dx.doi.org/10.1007/s00703-013-0238-8>)
28. **Kirankumar, N.V.P** and P.K. KunhiKrishnan, "Evaluation of performance of Micro Rain Radar over a tropical coastal station Thumba (8.50N, 76.90E)", *Atmospheric Research*, 134, 56-63, 2013. (<http://dx.doi.org/10.1016/j.atmosres.2013.07.018>)
29. Swain, D., **N. V. P. Kirankumar**, K. Kishore Kumar, Md.Mosarraf Hossain, M. Rajasekhar, GeethaRamkumar, "Application of Wavelet De-noising for Wind Speed retrieval from a 2.5 MHz Partial Reflection Radar", *Current Trends in Signal Processing*, 3(2), 2277-6176, 2013.
30. Anurose, T. J., D. Bala Subrahmanyam, C. B. S. Dutt, **N. V. P. Kiran Kumar**, Sherine Rachel John, Sandhya K. Nair, M. Santosh, Mannil Mohan, P. K. Kunhikrishnan, S. Sijikumar, S. S. Prijith, "Vertical structure of sea-breeze circulation over Thumba (8.5 N, 76.9 E, India) in the winter months and a case study during W-ICARB Field Experiment", *Meteorology and Atmospheric Physics*, 115 (3-4), 113-121, 2012. (<http://dx.doi.org/10.1007/s00703-011-0178-0>)
31. Beegum, N. S., K. Krishna Moorthy, D. Bala Subrahmanyam, **N.V.P. Kiran Kumar**, S. Suresh Babu, M. Mohan, "Short period variations of the aerosol mass concentrations over Bay of Bengal: Association with quasi-periodic variations in the Marine Atmospheric Boundary Layer parameters and fluxes", *Journal of Atmospheric and Solar-Terrestrial Physics*, 77, 78-84, 2012. (<http://dx.doi.org/10.1016/j.jastp.2011.11.012>)
32. Namboodiri, K.V.S., P.K.Dileep, K. Mammen, G. Ramkumar, **N.V.P.Kirankumar**, S. Sreenivasan, B. Suneel Kumar, and R. K. Manchanda, " Effect of annular solar eclipse of 15 January 2010 on

- meteorological parameters in the 0 to 65 km region over Thumba, India", *Meteorology Zeits*, 20, 635-647, 2012. (<http://dx.doi.org/10.1127/0941-2948/2011/0253>)
33. Subrahmanyam, D. B., T. J. Anurose, **N. V. P. Kiran Kumar**, Mannil Mohan, P. K. Kunhikrishnan, Sherine Rachel John, S. S. Prijith and C. B. S. Dutt, "Spatial and temporal variabilities in vertical structure of the Marine Atmospheric Boundary Layer over Bay of Bengal during Winter Phase of Integrated Campaign for Aerosols, gases and Radiation Budget", *Atmospheric Research*, 107, 178-185, 2012. (<http://dx.doi.org/10.1016/j.atmosres.2011.12.014>)
 34. Subrahmanyam, D. B., T. J. Anurose, Mannil Mohan, M. Santosh, **N. V. P. Kiran Kumar** and S. Sijikumar, "Impact of Annular Solar Eclipse of 15 January 2010 on Atmospheric Boundary Layer Characteristics over Thumba: A Case Study", *Pure and Applied Geophysics*, 169(4), 741-753, 2012. (<http://dx.doi.org/10.1007/s00024-011-0336-9>)
 35. Babu, S. S., V. Sreekanth, K. Krishna Moorthy, Mannil Mohan, **N. V. P. Kiran Kumar**, D. Bala Subrahmanyam, Mukunda M. Gogoi, Sobhan Kumar Kompalli, Naseema Beegum, Jai Prakash Chaubey, V. H. Arun Kumar and Ravi K. Manchanda, "Vertical profiles of aerosol black carbon in the atmospheric boundary layer over a tropical coastal station: Perturbations during an annular solar eclipse", *Atmospheric Research*, 99(3-4), 471-478, 2011. (<http://dx.doi.org/10.1016/j.atmosres.2010.11.019>)
 36. Nair, S. K., T. J. Anurose, D. Bala Subrahmanyam, **N. V. P. Kiran Kumar**, M. Santosh, S. Sijikumar, Mannil Mohan and K. V. S. Namboodiri, "Characterization of the Vertical Structure of Coastal Atmospheric Boundary Layer over Thumba (8.5 N, 76.9 E) during different seasons", *Advances in Meteorology*, 2011, 2011. (<http://dx.doi.org/10.1155/2011/390826>)
 37. Subrahmanyam, D. B., **N. V. P. Kiran Kumar**, C. B. S. Dutt, T. J. Anurose, P. K. Kunhikrishnan and Mannil Mohan, "Characterization of air-sea interaction processes over the Bay of Bengal during the winter phase of ICARB field experiment", *Atmospheric Research*, 99, 97-111, 2011. (<http://dx.doi.org/10.1016/j.atmosres.2010.09.005>)
 38. Subrahmanyam, D. B., T. J. Anurose, Mannil Mohan, M. Santosh, **N. V. P. Kiran Kumar**, S. Sijikumar, S. S. Prijith and Marina Aloysius, "Atmospheric Surface-Layer Response to the Annular Solar Eclipse of 15 January 2010 over Thiruvananthapuram", *Boundary-Layer Meteorology*, 141(2), 325-332, 2011. (<http://dx.doi.org/10.1007/s10546-011-9627-z>)
 39. **Kirankumar, N.V.P.**, T. Narayana Rao, B. Radhakrishna and D. Narayana Rao, "Statistical Characteristics of Raindrop Size Distribution in Southwest Monsoon Season", *Journal of Applied Meteorology and Climatology*, 47, 576 - 590, 2008. (<http://dx.doi.org/10.1175/2007JAMC1610.1>)
 40. Rao, T. N., **N. V. P. Kirankumar**, B. Radhakrishna, D. Narayana Rao, K. Nakamura, "Classification of Tropical Precipitating Systems Using Wind Profiler Spectral Moments. Part I: Algorithm Description and Validation", *Journal of Atmospheric and Oceanic Technology*, 25, 884-897, 2008. (<http://dx.doi.org/10.1175/2007JTECHA1031.1>)
 41. Rao, T. N., **N. V. P. Kirankumar**, B. Radhakrishna, D. Narayana Rao, K. Nakamura, "Classification of Tropical Precipitating Systems Using Wind Profiler Spectral Moments. Part II: Statistical Characteristics of Rainfall Systems and Sensitivity Analysis", *Journal of Atmospheric and Oceanic Technology*, 25, 898-908, 2008. (<http://dx.doi.org/10.1175/2007JTECHA1032.1>)
 42. Rao, T.N., **N. V. P. Kirankumar**, B. Radhakrishna, and D. Narayana Rao. "On the variability of the shape-slope parameter relations of the gamma raindrop size distribution model." *Geophysical Research Letters*, 33, 22, 2006.

Proceedings/Books

1. **KiranKumar N.V.P.** and Lavanya S, Variation of DSD parameters during stratiform precipitation over a coastal station Thumba (8.5 N, 76.9 E) using MRR observations, Proceedings of SPIE Asia Pacific

Remote Sensing Conference Vol. 9876, Remote Sensing of the Atmosphere, Clouds, and Precipitation VI, 98763K (May 5, 2016); doi:10.1117/12.2228125; <http://dx.doi.org/10.1117/12.2228125>, 2016

2. Lavanya S and **N.V.P. KiranKumar**, Seasonal variations of raindrop size distributions and understanding the variability of Z-R relations over the coastal station Thumba (8.5°N, 76.9°E), Proceedings of SPIE Asia Pacific Remote Sensing Conference Vol. 9876, Remote Sensing of the Atmosphere, Clouds, and Precipitation VI, 98760K (May 5, 2016); doi:10.1117/12.2223990; <http://dx.doi.org/10.1117/12.2223990>, 2016
3. **Kirankumar, N. V. P.**, T. Narayana Rao, D. Narayana Rao and P. K. Kunhikrishnan, "Studies of radar bright band using UHF radar at Gadanki", Remote Sensing of Atmosphere and Clouds (Proceedings of SPIE), 2006. (<http://dx.doi.org/10.1117/12.694109>)
4. Kunhikrishnan, P. K., B. R. Sivaraman, **N. V. P. Kiran Kumar** and Denny P. Alappattu, "Rain Observations with Micro Rain Radar (MRR) Over Thumba", Remote Sensing of the Atmosphere and Clouds (Proceedings of SPIE), 2006. (<http://dx.doi.org/10.1117/12.694115>)
5. Kunhikrishnan, P. K., B. R. Sivaraman, **N. V. P. Kiran Kumar** and Denny P. Alappattu, "Rain drop size distribution over a tropical Indian station using ground-based Disdrometer", Remote Sensing of the Atmosphere and Clouds (Proceedings of SPIE), 2006. (<http://dx.doi.org/10.1117/12.694122>)
6. Kunhikrishnan, P. K., Radhika Ramachandran, Denny P. Alappattu, **N. V. P. Kiran Kumar** and D. Bala Subrahmanyam, "A case study of sea breeze circulation at Thumba Coast through Observations and Modelling", Remote Sensing of Atmospheres, Oceans and Interactions (Proceedings of SPIE), 6404, 2006. (<http://dx.doi.org/10.1117/12.694125>)

किरण कुमार एनवीपी

वैज्ञानिक/इंजीनियर एस एफ

फ़ोन : +९१ ४७१ २५६३९२७

ईमेल : kirankumar_nvp[at]vssc[dot]gov[dot]in

अनुसंधान क्षेत्र

वायुमंडलीय सीमा परत और वर्षा अध्ययन

शैक्षणिक योग्यता

डिग्री	वर्ष	विवरण
• पी एचडी	२००७	भौतिकी, थीसिस शीर्षक: "वीएचएफ और यूएचएफ रडार का उपयोग कर उष्णकटिबंधीय अवक्षेपण प्रणालियों पर अध्ययन", श्री वेंकटेश्वर विश्वविद्यालय, तिरुपति, भारत। थीसिस सलाहकार: डॉ. डी. नारायण राव
• एम एससी	१९९९	एमएससी (टेक) इंजीनियरिंग। भौतिकी, श्री वेंकटेश्वर विश्वविद्यालय, तिरुपति, भारत

प्रोफेशनल बैकग्राउंड

पद	समयांतराल	संस्थान
• वैज्ञानिक	फरवरी २००६- वर्तमान	अंतरिक्ष भौतिकी प्रयोगशाला, वीएसएससी, इसरो, भारत
• रिसर्च स्कॉलर	जनवरी २००० – मार्च २००२ मार्च २००२ – मार्च २००६	श्री वेंकटेश्वर विश्वविद्यालय, तिरुपति, भारत राष्ट्रीय वायुमंडलीय अनुसंधान प्रयोगशाला, गडंकी, भारत

पुरस्कार/सम्मान/स्वीकरण/अभिनंदन

- बेस्ट पेपर अवार्ड -२०१४ १८वीं राष्ट्रीय अंतरिक्ष विज्ञान संगोष्ठी (एनएसएसएस-२०१४), डिब्रूगढ़ विश्वविद्यालय, डिब्रूगढ़, असम में स्वर्ण पदक, एमएससी (टेक) इंजीनियरिंग भौतिकी – १९९९, श्री वेंकटेश्वर विश्वविद्यालय, तिरुपति, भारत

प्रमुख अतिरिक्त जिम्मेदारियां

- सह -प्रधान वैज्ञानिक, इसरो-जीबीपी कार्यक्रम, नोबल (NOBLE) सीमा परत प्रयोगों के लिए वेधशालाओं का नेटवर्क, परियोजना
- अध्यक्ष, फर्नीचर समिति, एसपीएल
- सदस्य, शैक्षणिक समिति, एसपीएल

प्रोफेशनल बोडिज़ में अधेतावृत्ति

- एसोसिएट फेलो, एपी विज्ञान अकादमी -२०२०

सम्मेलनों/संगोष्ठियों/कार्यशालाओं का आयोजन

- सह-संयोजक: 'अंतरिक्ष आधारित मौसम विज्ञान, समुद्र विज्ञान, भूमंडल-जीवमंडल अंतःक्रिया' पर सत्र, २१ वीं राष्ट्रीय अंतरिक्ष

विज्ञान संगोष्ठी (एनएसएसएस-२०२२), ३१ जनवरी से ४ फरवरी २०२२, आईआईएसईआर कोलकाता।

- सह-अध्यक्ष, PS1-मौसम विज्ञान, समुद्र विज्ञान, भूमंडल-जैवमंडल संपर्क, एन एस एस एस -२०१९, २९-३१ जनवरी, २०१९, पुणे विश्वविद्यालय, पुणे

अनुसंधान मार्गदर्शन

- पीएचडी थेसिस पर्यवेक्षक : 01
- शोध सहयोगी (एनपीडीएफ: डीएसटी-एसईआरबी परियोजना) : 01

विशिष्ट वैज्ञानिक/तकनीकी योगदान

- नोबल (नेटवर्क ऑफ बाउंड्री लेयर एक्सपेरिमेंट्स) परियोजना के सह-प्रधान अन्वेषक की क्षमता में, मैंने नेटवर्क स्टेशनों, सह-अन्वेषकों और उपयुक्त प्रयोगात्मक साइटों की पहचान में महत्वपूर्ण भूमिका निभाई। सीमा परत उपकरणों की स्थापना, दिन-प्रतिदिन के कामकाज, वैज्ञानिक डेटा विश्लेषण के लिए एल्गोरिदम के विकास और सभी नेटवर्क स्टेशनों से रिकॉर्ड किए गए डेटा को संग्रहीत करने में व्यापक रूप से शामिल है। वर्तमान में भारत के तटीय, जटिल भूभाग और अर्ध-शुष्क क्षेत्रों जैसे विभिन्न भौगोलिक स्थानों पर 08 परिचालन स्टेशन। इसके अलावा, मैंने भू-आधारित उपकरणों और राडार का उपयोग करके अंतर्देशीय और तटीय दोनों क्षेत्रों में वर्षा अध्ययन के क्षेत्र में महत्वपूर्ण योगदान दिया। परिमाणित और स्थापित i) परावर्तन (Z) -रेनरेट (R) संबंध ii) वर्षा ड्रॉप आकार वितरण (DSD) पैरामीटर और iii) तटीय क्षेत्र थुम्बा पर तीन अलग-अलग मौसमों के लिए गामा वितरण पैरामीटर।

प्रकाशन –

1. Neha Shaikh Salim, Harilal B. Menon, **N. V. P. Kiran Kumar**, K. Rajeev, Study of micrometeorological characteristics of the atmospheric surface layer over a tropical coastal station in Goa. **Meteorology and Atmospheric Physics**, 135,3, <https://doi.org/10.1007/s00703-022-00940-3>, 2023.
2. Neha Shaikh Salim, Arjun Adhikari, Atiba A. Shaikh, Harilal B. Menon, **N. V. P. Kiran Kumar**, K. Rajeev, Aerosol-boundary layer dynamics and its effect on aerosol radiative forcing and atmospheric heating rate in the Indian Ocean sector of Southern Ocean. **Science of The Total Environment**, 858: 159770, <http://dx.doi.org/10.1016/j.scitotenv.2022.159770>, 2023.
3. Neha Shaikh Salim, Arjun Adhikari, Harilal B. Menon, **N. V. P. Kiran Kumar**, K. Rajeev, Thermodynamic characteristics of Marine Atmospheric Boundary Layer across Frontal Regions of the Indian Ocean Sector of Southern Ocean up to Prydz Bay region of Antarctica (24°S to 67°S) based on Three Field Campaigns, **Atmospheric Research**, 286, 106678, <https://doi.org/10.1016/j.atmosres.2023.106678>, 2023
4. Jaydeep Singh, Narendra Singh, Narendra Ojha, A. K. Srivastava, Deewan Singh Bisht, Amit Sharma, Andrea Pozzer, K Rajeev, **Nadimpally KiranKumar**, Ravi S. Singh, Vivek Panwar, S. K. Dhaka, Vinay Kumar, Tomoki Nakayama, Yutaka Matsumi, Sachiko Hayoshida, A. P. Dimri, Genesis of a Severe Dust Storm over the Indian Subcontinent: Dynamics and Impacts, **Earth and Space Science**, 9, e2021EA001702, <https://doi.org/10.1029/2021EA001702>, 2022.
5. Lavanya S, **Kiran Kumar NVP**, "Classification of tropical coastal precipitating cloud systems using disdrometer observations over Thumba, India", **Atmospheric Research**, 253, <https://doi.org/10.1016/j.atmosres.2021.105477>, 2021
6. N. Siva Kumar Reddy, **N.V.P. KiranKumar**, K. Rama Gopal, G. Balakrishnaiah, and K. Rajaobul Reddy, Characteristics of atmospheric surface layer during winter season over Anantapur (14.62° N, 77.65° E), a semi-arid location in peninsular India, **Journal of Atmospheric and Solar-Terrestrial Physics**, 216, 2021, <https://doi.org/10.1016/j.jastp.2021>
7. Kaustav Chakravarty, Shraddha Khandare, **N.V.P.KiranKumar** and Animesh Maitra. Unraveling the features of precipitation microphysics over two tropical stations of India that experiences different

- characteristics of Indian summer monsoon, **Journal of Atmospheric and Solar-Terrestrial Physics**, 2021, <https://doi.org/10.1016/j.jastp.2021.105710>
8. Nilamoni Barman, Arup Borgohain, Shyam S. Kundu , **N. V. P. Kiran Kumar**, "Seasonal variation of mountain-valley wind circulation and surface layer parameters over the mountainous terrain of the northeastern region of India", **Theor Appl Climatol.**, <https://doi.org/10.1007/s00704-020-03491-y>, 2021
 9. Jaydeep Singh, Narendra Singh, Narendra Ojha, Amit Sharma, Andrea Pozzer, **Nadimpally KiranKumar**, Kunjukrishnapillai Rajeev, Sachin S. Gunthe, V. Rao Kotamarthi, Effects of spatial resolution on WRF v3.8.1 simulated meteorology over the central Himalaya, Geoscientific-Model-Development, **Geoscientific-Model-Development**, 14, 1427–1443, 2021, <https://doi.org/10.5194/gmd-14-1427-2021>
 10. Subrahmanyam, K. V. and **N.V.P. Kirankumar**, Characteristics of Mesoscale Convective Systems over the Indian summer monsoon using IRBRT data, Science Spectrum: **Quarterly Journal of AP Akedamy of Science**, 2020, ISSN no. 2455-5053.2020S.
 11. Lavanya S., **N.V.P. Kirankumar**, S. Aneesh, K.V. Subrahmanyam, S. Sijikumar, "Seasonal variation of raindrop size distribution over a coastal station Thumba: A quantitative analysis", **Atmospheric Research**, ISSN 0169-8095, <https://doi.org/10.1016/j.atmosres.2019.06.004>, 2019
 12. Nilamoni Barman, Arup Borgohain, S.S. Kundu, Rakesh Roy, Biswajit Saha, Raman Solanki, **N.V.P. Kiran Kumar**, P.L.N Raju, "Daytime temporal variation of surface-layer parameters and turbulent kinetic energy budget in a topographically complex terrain over Umiam", **Boundary Layer Meteorology**, 172, 1, 149-166. <https://doi.org/10.1007/s10546-019-00443-6>, 2019
 13. Nilamoni Barman, Arup Borgohain, S.S. Kundu, Biswajit Saha, Rakesh Roy, Raman Solanki, **N.V.P. Kiran Kumar**, P.L.N Raju, "Impact of atmospheric conditions in surface-air exchange of energy in a topographically complex terrain over Umiam", **Meteorol Atmos Phys**, pp 1-14, <https://doi.org/10.1007/s00703-019-00668-7>, 2019
 14. Raman Solanki, Narendra Singh, **N. V. P. Kiran Kumar**, K. Rajeev, Ryoichi Imasu, S. K. Dhaka, "Impact of Mountainous Topography on Surface-Layer Parameters During Weak Mean-Flow Conditions", **Boundary Layer Meteorology** <https://doi.org/10.1007/s10546-019-00438-3>, 2019
 15. **Kiran Kumar N.V.P.**, K. Jagadeesh, K. Niranjana, K. Rajeev, "Seasonal variations of sea breeze and its effect on the spectral behaviour of surface layer winds in the coastal zone near Visakhapatnam, India", **Journal of Atmospheric and Solar-Terrestrial Physics**, ISSN 1364-6826, <https://doi.org/10.1016/j.jastp.2019.01.013>, 2019.
 16. Renju R., C. Suresh Raju, Nizy Mathew, **N. V. P. Kirankumar**, and K. Krishna Moorthy, Tropical Convective Cloud Characterization Using Ground-Based Microwave Radiometric Observations", **IEEE Trans. Geosci. Remote & Sensing**, Vol. 54, Issue 6, doi:10.1109/TGRS.2016.2527099, 2016.
 17. Chandrika, P., S. Vijaya Bhaskara Rao, **N.V.P. KiranKumar** and T. Narayana Rao , "Validation of Empirical Rainrate Models over a Tropical Coastal Station and an Inland Station in Southern India", **IEEE Antennas and Wireless Propagation Letters**, Vol. 15, 698-701, doi:10.1109/LAWP.2015.2469721, 2016.
 18. Subrahmanyam K. V., Karanam Kishore Kumar, **N.V.P. KiranKumar** and G. Viswanathan, "Evaluation of Doppler Weather Radar MEGHA-2700 Observations Using Gematronik Doppler Weather Radar and TRMM Precipitation Radar", **Meteorological Applications**, doi:10.1002/met.1571, 2016.
 19. Arun K Dwivedi, Sagarika Chandra, Manoj Kumar, Sanjay Kumar, **N.V.P. Kirankumar**, "Spectral Analysis of Wind and Temperature Components during Lightning in Pre-Monsoon Season over Ranchi", **Meteorology and Atmospheric Physics**, 127, 95-105, doi:10.1007/s00703-014-0346-0, 2015.
 20. Chandrika P, S Vijaya Bhaskara Rao, **N.V.P. Kirankumar**, T. Narayana Rao, "Review and testing analysis of Moupfouma rain rate model for Southern India", **Journal of Atmospheric and Solar-Terrestrial Physics**, 132, 33–36, doi.org/10.1016/j.jastp.2015.06.010, 2015.

21. Raman Solanki, Narendra Singh, **N.V.P. Kiran Kumar**, K. Rajeev and S. K. Dhaka, "Time Variability of surface-layer characteristics over a mountain ridge in the central Himalayas during the spring season", *Boundary Layer Meteorology*, doi.org/10.1007/s10546-015-0098-5, 2015.
22. Nair S.K., Thara Prabhakaran, Neethu Purushothaman, S. Sijikumar, **N.V.P. Kirankumar**, S. Muralidharan, D.B. Subrahmanyam, T.J. Anurose, S.S. Prijith, K.V.S. Namboodiri, "Diurnal variation of low-level jet characteristics during the onset phase of Asian Summer Monsoon over Peninsular India", *Theoretical and Applied Climatology*, 287-298, doi.org/10.1007/s00704-014-1168-1, 2015.
23. Arun K Dwivedi, Sagarika Chandra, Manoj Kumar, Sanjay Kumar, **N.V.P. Kirankumar**, "Atmospheric Surface layer responses to the extreme lightning day in Plateau region in India", *Journal of Atmospheric and Solar-Terrestrial Physics*, doi:10.1016/j.jastp.2014.08.003, 2014
24. Arun K Dwivedi, Sagarika Chandra, Manoj Kumar, Sanjay Kumar, **N.V.P. Kirankumar**, "Spectral Analysis of Wind and Temperature Components during Lightning in Pre-Monsoon Season over Ranchi", *Meteorology and Atmospheric Physics*, doi:10.1007/s00703-014-0346-0, 2014.
25. Kompalli S. K., S. Suresh Babu, K. Krishna Moorthy, M.R. Manoj, **N.V.P. Kirankumar**, K. Hareef Baba Shaeb, Ashok Kumar Joshi, "Aerosol Black Carbon characteristics over Central India: Temporal variation and its dependence on mixed layer height", *Atmospheric Research*, <http://dx.doi.org/10.1016/j.atmosres.2014.04.015>, 2014
26. Namboodiri, K. V. S., P K Dileep, Rahul Karunakaran Nileshwar, Koshy Mammen and **N V P Kirankumar**, "Coastal Boundary Layer Characteristics of Wind, Turbulence and Surface Roughness Parameter (Z0) over the Thumba Equatorial Rocket Launching Station (TERLS), India", *Journal of Climatology*, Vol. 2014, Article ID 504178, <http://dx.doi.org/10.1155/2014/5041782014>, 2014
27. **Kirankumar, N. V. P.**, Neethu Purushothaman and M. Santosh, "Response of spectral characteristics of wind and temperature of atmospheric surface layer to the noontime annular solar eclipse", *Journal of Atmospheric and Solar-Terrestrial Physics*, 97, 91-98, 2013. (<http://dx.doi.org/10.1007/s00703-013-0238-8>)
28. **Kirankumar, N.V.P** and P.K. KunhiKrishnan, "Evaluation of performance of Micro Rain Radar over a tropical coastal station Thumba (8.50N, 76.90E)", *Atmospheric Research*, 134, 56-63, 2013. (<http://dx.doi.org/10.1016/j.atmosres.2013.07.018>)
29. Swain, D., **N. V. P. Kirankumar**, K. Kishore Kumar, Md.Mosarraf Hossain, M. Rajasekhar, GeethaRamkumar, "Application of Wavelet De-noising for Wind Speed retrieval from a 2.5 MHz Partial Reflection Radar", *Current Trends in Signal Processing*, 3(2), 2277-6176, 2013.
30. Anurose, T. J., D. Bala Subrahmanyam, C. B. S. Dutt, **N. V. P. Kiran Kumar**, Sherine Rachel John, Sandhya K. Nair, M. Santosh, Mannil Mohan, P. K. Kunhikrishnan, S. Sijikumar, S. S. Prijith, "Vertical structure of sea-breeze circulation over Thumba (8.5 N, 76.9 E, India) in the winter months and a case study during W-ICARB Field Experiment", *Meteorology and Atmospheric Physics*, 115 (3-4), 113-121, 2012. (<http://dx.doi.org/10.1007/s00703-011-0178-0>)
31. Beegum, N. S., K. Krishna Moorthy, D. Bala Subrahmanyam, **N.V.P. Kiran Kumar**, S. Suresh Babu, M. Mohan, "Short period variations of the aerosol mass concentrations over Bay of Bengal: Association with quasi-periodic variations in the Marine Atmospheric Boundary Layer parameters and fluxes", *Journal of Atmospheric and Solar-Terrestrial Physics*, 77, 78-84, 2012. (<http://dx.doi.org/10.1016/j.jastp.2011.11.012>)
32. Namboodiri, K.V.S., P.K.Dileep, K. Mammen, G. Ramkumar, **N.V.P. Kirankumar**, S. Sreenivasan, B. Suneel Kumar, and R. K. Manchanda, "Effect of annular solar eclipse of 15 January 2010 on meteorological parameters in the 0 to 65 km region over Thumba, India", *Meteorology Zeits*, 20, 635-647, 2012. (<http://dx.doi.org/10.1127/0941-2948/2011/0253>)
33. Subrahmanyam, D. B., T. J. Anurose, **N. V. P. Kiran Kumar**, Mannil Mohan, P. K. Kunhikrishnan, Sherine Rachel John, S. S. Prijith and C. B. S. Dutt, "Spatial and temporal variabilities in vertical structure of the Marine Atmospheric Boundary Layer over Bay of Bengal during Winter Phase of

- Integrated Campaign for Aerosols, gases and Radiation Budget", *Atmospheric Research*, 107, 178-185, 2012. (<http://dx.doi.org/10.1016/j.atmosres.2011.12.014>)
34. Subrahmanyam, D. B., T. J. Anurose, Mannil Mohan, M. Santosh, **N. V. P. Kiran Kumar** and S. Sijikumar, "Impact of Annular Solar Eclipse of 15 January 2010 on Atmospheric Boundary Layer Characteristics over Thumba: A Case Study", *Pure and Applied Geophysics*, 169(4), 741-753, 2012. (<http://dx.doi.org/10.1007/s00024-011-0336-9>)
35. Babu, S. S., V. Sreekanth, K. Krishna Moorthy, Mannil Mohan, **N. V. P. Kiran Kumar**, D. Bala Subrahmanyam, Mukunda M. Gogoi, Sobhan Kumar Kompalli, Naseema Beegum, Jai Prakash Chaubey, V. H. Arun Kumar and Ravi K. Manchanda, "Vertical profiles of aerosol black carbon in the atmospheric boundary layer over a tropical coastal station: Perturbations during an annular solar eclipse", *Atmospheric Research*, 99(3-4), 471-478, 2011. (<http://dx.doi.org/10.1016/j.atmosres.2010.11.019>)
36. Nair, S. K., T. J. Anurose, D. Bala Subrahmanyam, **N. V. P. Kiran Kumar**, M. Santosh, S. Sijikumar, Mannil Mohan and K. V. S. Namboodiri, "Characterization of the Vertical Structure of Coastal Atmospheric Boundary Layer over Thumba (8.5 N, 76.9 E) during different seasons", *Advances in Meteorology*, 2011, 2011. (<http://dx.doi.org/10.1155/2011/390826>)
37. Subrahmanyam, D. B., **N. V. P. Kiran Kumar**, C. B. S. Dutt, T. J. Anurose, P. K. Kunhikrishnan and Mannil Mohan, "Characterization of air-sea interaction processes over the Bay of Bengal during the winter phase of ICARB field experiment", *Atmospheric Research*, 99, 97-111, 2011. (<http://dx.doi.org/10.1016/j.atmosres.2010.09.005>)
38. Subrahmanyam, D. B., T. J. Anurose, Mannil Mohan, M. Santosh, **N. V. P. Kiran Kumar**, S. Sijikumar, S. S. Prijith and Marina Aloysius, "Atmospheric Surface-Layer Response to the Annular Solar Eclipse of 15 January 2010 over Thiruvananthapuram", *Boundary-Layer Meteorology*, 141(2), 325-332, 2011. (<http://dx.doi.org/10.1007/s10546-011-9627-z>)
39. **Kirankumar, N.V.P.**, T. Narayana Rao, B. Radhakrishna and D. Narayana Rao, "Statistical Characteristics of Raindrop Size Distribution in Southwest Monsoon Season", *Journal of Applied Meteorology and Climatology*, 47, 576 - 590, 2008. (<http://dx.doi.org/10.1175/2007JAMC1610.1>)
40. Rao, T. N., **N. V. P. Kirankumar**, B. Radhakrishna, D. Narayana Rao, K. Nakamura, "Classification of Tropical Precipitating Systems Using Wind Profiler Spectral Moments. Part I: Algorithm Description and Validation", *Journal of Atmospheric and Oceanic Technology*, 25, 884-897, 2008. (<http://dx.doi.org/10.1175/2007JTECHA1031.1>)
41. Rao, T. N., **N. V. P. Kirankumar**, B. Radhakrishna, D. Narayana Rao, K. Nakamura, "Classification of Tropical Precipitating Systems Using Wind Profiler Spectral Moments. Part II: Statistical Characteristics of Rainfall Systems and Sensitivity Analysis", *Journal of Atmospheric and Oceanic Technology*, 25, 898-908, 2008. (<http://dx.doi.org/10.1175/2007JTECHA1032.1>)
42. Rao, T.N, **N. V. P. Kirankumar**, B. Radhakrishna, and D. Narayana Rao. "On the variability of the shape-slope parameter relations of the gamma raindrop size distribution model." *Geophysical Research Letters*, 33, 22, 2006.

कार्यवाही/पुस्तक

1. **KiranKumar N.V.P.** and Lavanya S, Variation of DSD parameters during stratiform precipitation over a coastal station Thumba (8.5 N, 76.9 E) using MRR observations, Proceedings of SPIE Asia Pacific Remote Sensing Conference Vol. 9876, Remote Sensing of the Atmosphere, Clouds, and Precipitation VI, 98763K (May 5, 2016); doi:10.1117/12.2228125; <http://dx.doi.org/10.1117/12.2228125>, 2016
2. Lavanya S and **N.V.P. KiranKumar**, Seasonal variations of raindrop size distributions and understanding the variability of Z-R relations over the coastal station Thumba (8.5°N, 76.9°E), Proceedings of SPIE Asia Pacific Remote Sensing Conference Vol. 9876, Remote Sensing of the

Atmosphere, Clouds, and Precipitation VI, 98760K (May 5, 2016); doi:10.1117/12.2223990; <http://dx.doi.org/10.1117/12.2223990> , 2016

3. **Kirankumar, N. V. P.**, T. Narayana Rao, D. Narayana Rao and P. K. Kunhikrishnan, "Studies of radar bright band using UHF radar at Gadanki", Remote Sensing of Atmosphere and Clouds (Proceedings of SPIE), 2006. (<http://dx.doi.org/10.1117/12.694109>)
4. Kunhikrishnan, P. K., B. R. Sivaraman, **N. V. P. Kiran Kumar** and Denny P. Alappattu, "Rain Observations with Micro Rain Radar (MRR) Over Thumba", Remote Sensing of the Atmosphere and Clouds (Proceedings of SPIE), 2006. (<http://dx.doi.org/10.1117/12.694115>)
5. Kunhikrishnan, P. K., B. R. Sivaraman, **N. V. P. Kiran Kumar** and Denny P. Alappattu, "Rain drop size distribution over a tropical Indian station using ground-based Disdrometer", Remote Sensing of the Atmosphere and Clouds (Proceedings of SPIE), 2006. (<http://dx.doi.org/10.1117/12.694122>)
6. Kunhikrishnan, P. K., Radhika Ramachandran, Denny P. Alappattu, **N. V. P. Kiran Kumar** and D. Bala Subrahmanyam, "A case study of sea breeze circulation at Thumba Coast through Observations and Modelling", Remote Sensing of Atmospheres, Oceans and Interactions (Proceedings of SPIE), 6404, 2006. (<http://dx.doi.org/10.1117/12.694125>)