

CURRICULUM VITAE

DR. C. VINEETH

SPACE PHYSICS LABORATORY
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AREAS OF SPECIFIC RESEARCH INTEREST

Atmospheric & Space Sciences: *Optical and Radio Remote Sensing of the Terrestrial and Planetary Ionospheres, Solar-Terrestrial Physics, Coupling processes in Atmosphere-Ionosphere region, Sun-Earth Connection, Space weather etc..*

PROFESSIONAL EXPERIENCE

Scientist/Engineer 'SE' (Jan 2016-Present)
Space Physics Laboratory (SPL), VSSC, ISRO, Trivandrum, India.

Scientist/Engineer 'SD' (June 2011-Dec 2015)
SPL, VSSC, ISRO, Trivandrum, India.

Research Associate (2009-2011)
SPL, VSSC, ISRO, Trivandrum, India.

Post Doctoral Fellow (2008-2009)
Stanford Research Institute, CA, U.S.A.

EDUCATIONAL QUALIFICATIONS

Ph.D Physics (Space Physics) - 2008
Space Physics Laboratory, VSSC, ISRO (University of Kerala, Trivandrum, India).

MSc. Physics (Electronics) - 2002
Department of Physics, Cochin University of Science and Technology, Cochin, India.

BSc. Physics - 2000
University of Calicut, Calicut, India.

PUBLICATIONS & PROCEEDINGS

✓ Peer Reviewed International Journals	: 29
✓ International Proceedings	: 14
✓ Conferences/Symposia Presentations	: 17
✓ Total citations	: 195 (h-index : 9, i10-index: 07)

AWARDS & HONORS

1. **NASI-Young Scientist Platinum Jubilee Award**, National Academy of Sciences, India, 2015.
2. **Zeldovich Medal**, Russian Academy of Sciences and COSPAR, 2014 (first Indian to receive).
3. **INSA Young Scientist Medal**, Indian National Science Academy, 2014.
4. **Kerala State Young Scientist Award**, Govt. of Kerala, 2013.
5. **Young Scientist Presentation Award**, International Symposium of Equatorial Aeronomy, Peru, 2012.
6. **Elected Young Associate**, Indian Academy of Sciences, 2011.
7. **URSI Young Scientist Award**, International Union of Radio Sciences (URSI), 2011.

OTHER RECOGNITIONS

1. **Editorial Board Member** of *Journal of Dataset Papers in Science*, since 2012.
2. **Solicited Speaker** in the 39th *Scientific Assembly of COSPAR*, 2012.
3. **Post Doctoral Fellowship** in *Optical Instrumentation* from *SRI International, CA, USA*, 2008.
4. **Two Best Paper Awards** from *Indian Council for URSI (INCURSI)*, 2005.

PROFESSIONAL MEMBERSHIPS

1. *Member of American Geophysical Union (AGU)*.
2. *Member of International Union of Radio Sciences (URSI)*.
3. *Associate of Committee on Space Research (COSPAR)*.
4. *Life Member of Kerala Academy of Sciences (KAS)*.

REVIEWER FOR INTERNATIONAL JOURNALS

1. *Geophysical Research Letters*, 2. *Annales Geophysicae*, 3. *Journal of Geophysical Research*,
4. *Journal of Atmospheric and Solar Terrestrial Physics*, 5. *Journal of Earth System Science*,
6. *Indian Journal of Radio and Space Physics*, 7. *Advances in Space Research*, 8. *Radio Science*,
9. *Current Science*, 10. *Journal of Indian Geophysical Union*, 11. *Acta Astronautica*.

INVOLVEMENT IN ISRO'S MAJOR PROJECTS

1. *Project Manager, Airglow Photometers of Indian network for Space Weather Impact Monitoring (InSWIM)*.
2. *Active member of the team constituted for realizing an Active Aperture VHF radar at Thumba*.

INSTRUMENTATION

- ✓ Involved in the conceptualization, initial design and laboratory experiments of a Satellite payload, *Limb Viewing Hyper Spectral Airglow Imager (LiVHySI)*, for Indian Space Research Organization's (ISRO) forthcoming small satellite program.
- ✓ Designed and developed a *Portable Multiwavelength Photometer*.
- ✓ Experience in the optical design of a *High Resolution Echelle Spectrograph* for different applications in upper atmospheric/ionospheric research.
- ✓ Designed and developed a *Fabry-Perot Interferometer (FPI) based Multiwavelength All sky Airglow Photometer (MAAP)*.
- ✓ Designed and developed *Intensified CCD based All Sky Airglow Imager (ASAI)*.
- ✓ Developed a *Nighttime Photometer* as a part of the Annular Eclipse Campaign (Sooryagrahan, 2010).
- ✓ Expertise in optical alignment and operation of *Fabry-Perot Interferometer (FPI), Photometer, Spectrometer and Grating based Monochromator*.

CURRENT RESEARCH INTERESTS

Exploring new experimental methods for investigating various processes in terrestrial upper atmosphere-ionosphere region. Investigation of (i) Various type of neutral and plasma processes prevailing in terrestrial atmospheric with emphasis on Sun-Earth interactions, (ii) Coupling processes in the upper atmospheric system over low latitudes and also the High-latitude Low-latitude coupling and (iii) Sudden Stratospheric Warming (SSW) and its equatorial effects (iv) Various dip equatorial plasma phenomena like Equatorial Electrojet (EEJ), Counter Electrojet (CEJ), Equatorial ionization anomaly (EIA), Equatorial Spread-F (ESF), Equatorial Temperature Wind anomaly (ETWA) etc. and their possible connection with both local and global energetic/dynamical variabilities.

PARTICIPATION IN EXPERIMENTAL CAMPAIGNS

Name of the Campaign	Place and Period	Major Responsibilities under taken
Solar Eclipse Campaign (Sooryagrahan 2010)	Space Physics Lab, VSSC, Trivandrum, India January 14-17, 2010	Development of a Nighttime Photometer and Operation of various Optical Instruments.
Climate And Weather of Sun-Earth System (CAWSES) Campaign	Space Physics Lab, VSSC, Trivandrum, India March 01-April 30, 2006	Operation of Optical Instruments, H.F.Radar, Meteor Wind Radar, Magnetometer and Ionosonde
Equatorial Spread-F (ESF) Campaign	Space Physics Lab, VSSC, Trivandrum, India March 01-31, 2005	Operation of Optical Instruments, H.F.Radar, Magnetometer, Ionosonde and Radio beacon receiver

SUMMARY OF THE PH. D THESIS

The prime objective of my doctoral work was to investigate the coupling/interactive processes in the terrestrial upper atmosphere namely the Mesosphere-Thermosphere-Ionosphere (MTI) region, using *Optical and Radio Remote Sensing* techniques. The research work had been carried out at **Space Physics Laboratory, Vikram Sarabhai Space Centre (VSSC), ISRO**, located at **Thumba** (8.5°N, 77°E), a geomagnetic dip equatorial station in India. The daytime optical remote sensing instrument namely, the *Multi-Wavelength Dayglow Photometer (MWDPM)*, radio remote sensing instruments like *Meteor Radar, Ionosonde and GPS receivers* were the main instruments used for the studies reported in this thesis. In addition to these, data from various satellite measurements and data from NCEP/NCAR reanalysis product across the globe were also been used for analyzing the solar activity, stratospheric energetics/dynamics etc. The combination of these techniques along with the unique geophysical location of Thumba makes this thesis work '*first of its kind*'. Perhaps, this could be considered as the first PhD thesis from India, which deals with most of the scientific objectives of the *Climate And Weather of Sun-Earth System (CAWSES-INDIA)* program

IMPORTANT RESEARCH OUTCOMES

- ✓ *First systematic measurement of daytime mesopause temperature from magnetic equator and its comparison with meteor radar derived temperature (Geophys. Res Lett., 2005).*
- ✓ *Signatures of Atmosphere-Ionosphere coupling over the magnetic equator (Geophys. Res Lett., 2007).*
- ✓ *Evidence for strong vertical coupling between the mesopause and lower thermospheric regions during the special plasma process called the Equatorial Counter Electrojet events, through gravity wave induced vertical winds (Geophys. Res Lett., 2007).*
- ✓ *Effects of moon shadow during solar eclipse over the equatorial upper atmosphere inferred through the optical emissions from space (J. Geophys. Res., 2008; J. Geophys. Res., 2011).*
- ✓ *First direct evidence for the signatures of polar Sudden Stratospheric Warming on equatorial upper atmosphere (Geophys. Res Lett., 2009, Ann. Geophys., 2009).*
- ✓ *First ever evidence for the tropical connection to the polar Sudden Stratospheric warming through quasi 16-day planetary wave (Ann. Geophys., 2010).*
- ✓ *Wave-Tidal interactions and its possible implications on equatorial upper atmospheric electrodynamics (J. Geophys. Res., 2011).*
- ✓ *First time' measurements of short and long-term daytime mesopause temperature over Trivandrum using Multiwavelength Dayglow Photometry (Earth Planet Space 2010; J. Geophys. Res., 2011).*

- ✓ *First direct evidence for the lowering of centroid of thermospheric $O^+(D)$ 630.0 nm emission over the geomagnetic equator (Adv. Space Res., 2011).*
- ✓ *First observational evidence for the reversal of zonal wind and enhanced gravity wave activity at mesospheric altitude during CEJ events (J. Atmos. Solar Terr. Phys., 2012: Ind. J. Radio & Space Phys., 2012).*

LIST OF INTERNATIONAL PUBLICATIONS

1. C. Vineeth, T. K. Pant, M. Antonita, G. Ramkumar, C. V. Devasia and R. Sridharan, (2005), A comparative study of daytime mesopause temperatures obtained using unique ground-based optical and Meteor wind radar techniques over the magnetic equator, *Geophys. Res. Lett.*, **32**, L19101, doi: 10.1029/2005GL023728.
2. C. Vineeth, T. K. Pant, C. V. Devasia and R. Sridharan (2007), Atmosphere-Ionosphere coupling observed over the dip equatorial MLTI region through the quasi 16-day wave, *Geophys. Res. Lett.*, **34**, L12102, doi: 10.1029/2007GL030010.
3. C. Vineeth, T. K. Pant, C. V. Devasia and R. Sridharan, (2007), Highly localized cooling in daytime mesopause temperature over the dip equator during Counter Electrojet events: -First results, *Geophys. Res. Lett.*, **34**, L14101, doi: 10.1029/2007GL030298.
4. Pant T. K., C. Vineeth and R. Sridharan (2007), Daytime optical investigation of the equatorial mesopause energetics in the context of equatorial MLTI coupling: Recent results, *Ind. J. Radio and Space Phys.*, **36**, 514-525.
5. Pant, T. K., D. Tiwari, C. Vineeth, S. V. Thampi, S. Sridharan, C. V. Devasia, R. Sridharan, S. Gurubaran, and R. Sekar (2007), Investigation on the mesopause energetics and its possible implications on the equatorial MLTI processes through coordinated daytime airglow and radar measurements, *Geophys. Res. Lett.*, **34**, L15102, doi:10.1029/2007GL030193.
6. C. Vineeth, T. K. Pant, S. V. Thampi, R. Sridharan, S. Ravindran, C. V. Devasia and S. Alex (2008), Investigation of the response of equatorial MLTI region during a partial solar eclipse through ground-based daytime optical technique, *J. Geophys. Res.*, **113**, A03302, doi:10.1029/2007JA012335.
7. Kumar, K. K., C. Vineeth, T. M. Antonita, T. K. Pant and R. Sridharan (2008), Determination of daytime OH emission heights using simultaneous meteor radar, day-glow photometer and TIMED/SABER observations over Thumba (8.5°N, 77°E), *Geophys. Res. Lett.*, **35**, L18809, doi: 10.1029/2008GL035376.
8. Sreeja, V., C. Vineeth, T. K. Pant, S. Ravindran and R. Sridharan (2009), Role of gravity wavelike seed perturbations on the triggering of ESF: - First results from unique dayglow observations, *Ann. Geophys.*, **27**, 313-318.
9. C. Vineeth, T. K. Pant and R. Sridharan (2009), Equatorial Counter Electrojets and polar Stratospheric Sudden Warmings-A classical example of high latitude-low latitude coupling?, *Ann. Geophys.*, **27**, 3147-3153.
10. C. Vineeth, T. K. Pant, K. K. Kumar, G. Ramkumar and R. Sridharan (2009), Signatures of Low latitude-High Latitude Coupling in the Tropical MLT Region during Sudden Stratospheric Warming, *Geophys. Res. Lett.*, **36**, L20104, doi: 10.1029/2009GL040375.
11. C. Vineeth, T. K. Pant, S. Gurubaran, M. M. Hossain and R. Sridharan (2010), A comparison of Optically measured Daytime Mesopause Temperatures over the tropics during the Solar Maximum and Minimum Periods, *Earth, Planet Space*, **62**, 647-653.
12. C. Vineeth, T. K. Pant, K. K. Kumar and S. G. Sumod (2010), The Tropical Connection to the Polar Stratospheric Sudden Warming through Quasi 16-day wave, *Ann. Geophys.*, **28**, 2007-2013.
13. Hossain, M. M., T. K. Pant, C. Vineeth, S. G. Sumod and R. Sridharan (2010), Daytime Sodium Airglow Emission Measurements over Trivandrum using a Scanning Monochromator: First Results, *Ann. Geophys.*, **28**, 2071-2077.
14. C. Vineeth, T. K. Pant, R. Sridharan (2011), Daytime Mesopause Energetics over a Tropical Station, Trivandrum (8.5°N, 77°E):- An Investigation using the Multiwavelength Dayglow Photometry, *J. Geophys. Res.*, **116**, A01304, doi: 10.1029/2010JA015633.

15. Pant T. K, C. Vineeth, S. G. Sumod and Lijo Jose (2011), Evidence for the Lowering of the Centroid of Daytime Thermospheric O(¹D) 630.0 nm emission over the Magnetic Equator:- First results, *Adv. Space Res.*, **47**, 729-735, doi:10.1016/j.asr.2010.08.011.
16. C. Vineeth, T. K. Pant, S. G. Sumod, K. K. Kumar, S. Gurubaran, R. Sridharan (2011), Planetary Wave-tidal interactions over equatorial MLT region and their possible implications for the Equatorial Electrojet, *J. Geophys. Res.*, **116**, A01314, doi: 10.1029/2010JA015895.
17. Sumod, S, G, T. K. Pant, C. Vineeth and M. M. Hossain (2011), "A new insight into the vertical neutral-ion coupling between the mesopause and ionosphere F region", *Ann. Geophys.*, **29**, 421-426.
18. Sumod, S. G, T. K. Pant, C. Vineeth and M. M. Hossain, (2011), "Response of Tropical Mesopause to the longest Annular Solar Eclipse of this millennium", *J. Geophys. Res.*, **116**, A06317, doi: 10.1029/2010JA016326.
19. Jose, L, S. Ravindran, C. Vineeth, T. K. Pant, K. K. Kumar and S. Alex, (2011), Investigation of the response time of the equatorial Ionosphere in context of the Equatorial Electrojet and Equatorial ionization anomaly, *Ann. Geophys.*, **29**, 1267-1275.
20. Pant, T. K, C. Vineeth and M.M. Hossain (2011), A brief review of Neutral Atmosphere Ionosphere Coupling over the dip Equator, *Review Article, Asian J. Phys.*, **4**, 435-442.
21. C. Vineeth, T. K. Pant, K. K. Kumar, Lijo Jose, S. G. Sumod and S. Alex (2012), Counter Equatorial Electrojets:- Analysis of the variability in Daytime Mesopause Temperature and Winds, *J. Atmos. Solar Terr. Phys.*, **75-76**, 115-121, doi:10.1016/j.jastp.2011.07.005.
22. Das, S. S. K. K. Kumar, S. K. Das, C. Vineeth, T. K. Pant and G. Ramkumar (2012), Long-term variability of mesopause temperature derived from two independent methods using meteor radar and its comparison with SABER and EOS-MLS, and a co-located multi-wavelength day-glow photometer, over the equatorial station Thumba (8.5°N, 76.5°E), *Int. J. Remote Sensing*, **33**, No. 14, 20 July 2012, 4634-4647.
23. C. Vineeth, T. K. Pant and M. M. Hossain (2012), Evidence for Enhanced Gravity wave activity over the equatorial MLT Region during Counter Electrojet Events, *Ind. J. Radio & Space Phys.*, **41**, 258-263.
24. Simi, K. G, C. Vineeth, T. K., Pant and S. R. P. Nayar (2013), Analysis of the Vertical Drifts in the Post Sunset Equatorial F region during Geomagnetically Quiet and Disturbed periods, *Ind. J. Radio & Space Phys.*, **42**, 229-239.
25. Mridula, N, T. K. Pant, C. Vineeth and K. K. Kumar (2014), Features of the Occurrence of the Additional Stratification on the Bottom-side F-region over the Equatorial Location of Trivandrum, *Adv. Space Res.*, **54**, doi.Org/1016/j.asr.2013.12.036, 2014.
26. Hossain, M. M, C. Vineeth, S. G. Sumod and T. K. Pant (2014), Highly varying Daytime Sodium Airglow emissions over an Equatorial Station: A case study using the measurements from a Grating Monochromator, *Earth Planet Space.*, 2014. doi:10.1186/1880-5981-66-56..
27. Simi, K. G, C. Vineeth and T. K., Pant (2014), Analysis of Post-Sunset F-region Vertical Plasma Drifts during Counter Electrojet days using Multi Frequency HF Doppler Radar, *Adv. Space Res.*, 2014, <http://dx.doi.org/10.1016/j.asr.2014.04.002>.
28. Sumod S. G, T. K. Pant, C. Vineeth and M. M. Hosain (2014), On the ionospheric and thermospheric response of Solar flare events of January 19, 2005: An investigation using radio and optical techniques, *J. Geophys. Res.*, 2014, doi:10.1002/2013JA019714.
29. Sumod S. G, T. K. Pant, C. Vineeth and M. M. Hosain (2014), Unusual depletion of OI 630.0 nm dayglow and simultaneous mesopause heating during the penetration of interplanetary electric field over dip equator (*In Press*, 2014JA020584, *J. Geophys. Res.*, 2014).

CONFERENCES/SYMPOSIA/PROCEEDINGS

1. T. K. Pant, C. Vineeth, R. Sridharan, C. V. Devasia, The high latitude-low latitude thermosphere ionosphere coupling during varying geomagnetic conditions - a case study, (*Union Radio-Scientifique Internationale -General Assembly (URSI-GA), New Delhi, India, 2005*).
2. T. K. Pant, C. Vineeth, R. Sridharan and C. V. Devasia, Investigation of the mesopause energetics and its possible implications on the mesosphere-lower thermosphere-ionosphere (MLTI) processes (*Committee on Space Research (COSPAR), Beijing, China, 2006*).
3. C. Vineeth, T. K. Pant, C. V. Devasia and R. Sridharan, Evidence of direct coupling between equatorial mesopause and lower thermosphere-ionosphere region using dayglow measurements, (*National Space Science Symposium (NSSS), Visakhapatnam, India, 2006*).
4. T. K. Pant, C. Vineeth, R. Sridharan and C. V. Devasia, Investigation of the role of various neutral and electrodynamical processes in the variabilities exhibited by O^1D 630.0nm Dayglow through Optical Measurements, (*NSSS, Visakhapatnam, India, 2006*).
5. C. Vineeth, T. K. Pant, C. V. Devasia and R. Sridharan, High latitude low latitude coupling observed in Equatorial MLTI Region during Sudden Stratospheric Warming event (*Indian National Council for International Union for Radio Sciences (INCURSI), New Delhi, India, 2007*).
6. T. K. Pant, C. Vineeth, S. V. Thampi, V. Sreeja, G. Manju, S. Ravindran, R. Sridharan and C. V. Devasia, Investigation of the Mesopause Lower Thermosphere Ionosphere (MLTI) Coupling: -First results from the CAWSES campaign (*INCURSI, New Delhi, India, 2007*).
7. C. Vineeth, T. K. Pant, K. K. Kumar R. Sridharan, Polar Stratospheric Sudden Warming-the tropical connection, (*NSSS, Ooty, India, 2008*).
8. C. Vineeth, T. K. Pant and R. Sridharan, Favorable Occurrence of Equatorial Counter Electrojets during Polar Stratospheric Sudden Warmings - First Results, (*NSSS, Ooty, India, 2008*).
9. T. K. Pant, C. Vineeth, K. K. Kumar and R. Sridharan, Neutral Atmosphere-Ionosphere Coupling Over the Dip Equator through Wave-Tidal Interactions, (*NSSS, Ooty, India, 2008*).
10. M. M. Hossain, C. Vineeth, T. K. Pant, R. Sridharan, Observation of Na Day-Glow using a 1-meter scanning Monochromator at Trivandrum, (*NSSS, Ooty, India, 2008*).
11. C. Vineeth, T. K. Pant and R. Sridharan, Mesosphere-Lower-Thermosphere (MLT) coupling over the dip equator observed using ground based Daytime Optical and Radar measurements, (*Union Radio-Scientifique Internationale-General Assembly (URSI-GA), Chicago, USA, 2008*).
12. C. Vineeth, T. K. Pant, S. V. Thampi, R. Sridharan, Atmosphere Ionosphere coupling over the dip equator: - Implications on the Equatorial Electrojet Irregularities, (*URSI-GA, Chicago, USA, 2008*).
13. C. Vineeth, T. K. Pant, T.G. Slanger and R. Sridharan, Vertical coupling over equatorial MLT region during polar Sudden Stratospheric Warmings, (*American Geophysical Union (AGU) Fall meeting, San Francisco, USA, 2008*).
14. C. Vineeth, T. K. Pant, S. G. Sumod and R. Sridharan, First Systematic Measurements of Daytime Mesopause Temperatures from Trivandrum (8.5°N, 77°E), (*National Space Science Symposium (NSSS), Rajkot, India, 2010*).
15. C. Vineeth, T. K. Pant, S. G. Sumod and R. Sridharan, A Comparison of Optically Measured Daytime Mesopause Temperatures over the Tropics during Solar Maximum and Minimum Periods (*NSSS, Rajkot, India, 2010*).
16. C. Vineeth, T. K. Pant and K. K. Kumar, Equatorial Counter Electrojet:- An Investigation using the Ground Based Optical and Radio Probing Techniques (*Union Radio-Scientifique Internationale-General Assembly and Scientific Symposium (URSI-GASS), Istanbul, Turkey, 2011*).
17. C. Vineeth, L. Jose and T. K. Pant, Planetary Wave Oscillations in the Occurrence time of Equatorial Spread-F (*URSI-GASS, Istanbul, Turkey, 2011*).
18. S. G. Sumod, T. K. Pant, C. Vineeth and M. M. Hossain, A new Perspective to the Daytime h'F variations and its role in modulating the mesopause energetics over Equatorial Latitudes (*URSI-GASS, Istanbul, Turkey, 2011*).

19. *M.M. Hossain, T. K. Pant, C. Vineeth*, Spatial Heterodyne Spectrometer Development for imaging Airglow emissions, (*International Conference on Contemporary Trends in Optics and Optoelectronics, Trivandrum, India, 2011*).
20. *Sumod, S. G, T. K. Pant, C. Vineeth and M. M. Hossain*, Response of Tropical Mesopause to the longest Annular Solar Eclipse of this millennium, (*National Workshop on Solar Eclipse (NawRoSE), Trivandrum, India, 2011*).
21. *Lijo, T.K. Pant, C. Vineeth and S. G Sumod*, Electron Density variation during the Annular solar Eclipse: An investigation using the Modern Digisonde, (*NaWRose, Trivandrum, India, 2011*).
22. *C. Vineeth and T. K. Pant*, Polar Stratospheric Sudden Warming and Equatorial Upper Atmosphere: Some Unexpected Connections (*NSSS, Tirupati, India, 2012*).
23. *S. G. Sumod, T. K. Pant, C. Vineeth and M. M. Hossain*, Signatures of Sudden Stratospheric Warming on the Equatorial Ionosphere-Thermosphere System (*NSSS, Tirupati, India, 2012*).
24. *C. Vineeth and T. K. Pant*, Impacts of Polar Stratospheric Sudden Warming on the Equatorial Atmosphere-Ionosphere Region (*13th International Symposium on Equatorial Aeronomy, Paracas, Peru, 2012*).
25. *S. G. Sumod, T. K. Pant, C. Vineeth and M. M. Hossain*, Signatures of Sudden Stratospheric Warming on the Equatorial Ionosphere-Thermosphere System (*ISEA, Paracas, Peru, 2012*).
26. *C. Vineeth, N. Mridula and T. K. Pant*, Planetary Wave-Tidal Interactions and the Equatorial Electrojet (*Solicited talk, 39th COSPAR Scientific Assembly, Mysore, India, 2012*).
27. *S. G. Sumod, T. K. Pant, C. Vineeth and M. M. Hossain*, Signatures of Sudden Stratospheric Warming on the Equatorial Ionosphere-Thermosphere System (*39th COSPAR Scientific Assembly, Mysore, India, 2012*).
28. *C. Vineeth and T. K. Pant*, Coupling Processes during Equatorial Counter Electrojet : Recent Developments (*Lead Talk, NSSS, Dibrugarh, India, 2014*).
29. *Ajesh, A, C. Vineeth and T. K. Pant* Vertical Coupling between the equatorial Mesosphere and Lower E region: Analysis using the ground based Optical and Radio Techniques (*NSSS, Dibrugarh, India, 2014*).
30. *Miziya K, K. G. Gopchandran, P. Pradeepkumar, C. Vineeth, T. K. Pant and P. G. Anumod* (2013), Automation of the Gate Scanning Mechanism of the Multi-Wavelength Dayglow Photometer Using LabVIEW, *IEEE 31661, International Conference on Computing, Communication and Network Technologies-ICCCNT 2013*.
31. *Miziya K, K. G. Gopchandran, P. Pradeepkumar, C. Vineeth, T. K. Pant and P. G. Anumod* (2013), Design and Implementation of Data Acquisition and Control System for Multi-Wavelength Dayglow Photometer, *IEEE 31661, International Conference on Computing, Communication and Network Technologies-ICCCNT 2013*.

INVITED TALKS

1. Atmosphere-Ionosphere coupling over the magnetic equator (*Aryabhata Research Institute for Observational Sciences (ARIES), Nainital, Uttarakhand, India, 2007*).
2. Multiwavelength Dayglow Photometry: Instrumentation and Applications (*Engineering Systems Division, SRI International, California, USA, 2008*).
3. Effects of Geomagnetic storms on the upper atmosphere (*Molecular Physics Laboratory, SRI International, California, USA, 2008*).
4. Coupling Processes in the Equatorial Mesosphere-Thermosphere-Ionosphere Region (*Space Physics Research Laboratory, Embry Riddle Aeronautical University, Florida, USA, 2009*).
5. Space Science Research in India (*M.E.S. Kalladi College, Palakkad, Kerala, India, 2009*).
6. Space Research in India (*Jyothi Engineering College, Thrissur, Kerala, India, 2010*).
7. Radiation Budget of the Earth (*St. Paul's College, Cochin, Kerala, India, 2011*).
8. Optical Remote Sensing of the Earth's Near Space Environment (*26th Kerala Science Congress, Wayanad, Kerala, India, 2014*).
9. Solar-Terrestrial Environment: Some Intriguing Aspects (*M.E.S. Kalladi College, Palakkad, Kerala, India, 2014*).

RESEARCH SUPERVISION

Ph. D Thesis: Co-supervising the doctoral research of Mr. Ajesh. A since November 2012.

M.Sc Tech. (Photonics): Supervised the M. Tech project works of Ms. Adhila. T. K and Gayathri Mohan. K. V, May 2013.

M. Sc (Physics): Supervised the M.Sc Project works of Ms. Aswathy N Aravind and Sarika S. G, June 2012 and co-supervised the M.Sc dissertation works of Ms. Revathi and Ms. Sandhya June 2010.