

Curriculum vitae

Personal Information

Name : **Dr. SIDDARTH SHANKAR DAS**

Present Position : **Scientist - 'SF'**

Present Affiliation & communication address : **Space Physics Laboratory**
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Indian Space Research Organisation
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Nationality : Indian

Date of Birth : 03 May 1977



Academic Qualifications

Degree	Year	Class	Institute/University
B.Sc. (Physics, Chemistry, Maths)	1995-1998	First Class	Guru Ghasidas University, Bilaspur, India
M.Sc. (Physics/Digital Electronics) <i>(University Second Position)</i>	1998-2000	First Class	Guru Ghasidas University, Bilaspur, India
Ph.D.(Physics/Atmospheric Science)	2002-2006	First Class <i>(Pre-PhD)</i>	Sri Venkateswara University, Tirupati, India

Work carried out at "**National Atmospheric Research Laboratory (NARL)**", Dept. of Space, Gadanki-517112

Thesis Title: *Studies on the characteristics of stable and turbulent layers using UHF/VHF radars and in-situ balloon measurements.*

Research Supervisors : *Dr. Atma Ram Jain, and Prof.D.Narayana Rao, Former Director(s), NARL*

Research Positions

Positions held	Period	Institution/Organisation
Scientist 'SF'	Jan.2018-Continue	Space Physics Laboratory Vikram Sarabhai Space Centre, ISRO, Trivandrum, India
Scientist 'SE'	Jul.2013-Dec.2017	'As above'
Scientist 'SD'	Jun.2008- Jun.2013	'As above'
Scientist 'B'	Nov.2005-Jun.2008	National Institute of Wind Energy <i>(Formerly : Centre for Wind Energy Technology)</i> Ministry of New and Renewable Energy, Govt. of India, Chennai-600100, India
Sr. Research Fellow	Nov.2002-Nov.2005	National Atmospheric Research Laboratory <i>(Formerly : National MST Radar Facility)</i> Department of Space, Government of India , Gadanki-517112, India
Visiting Research Fellow	Nov.2000-Nov.2002	'As above'

Additional Qualifications

Degree	Year	Institute/University
Certificate course in WAsP (Wind Atlas Analysis and Application Program)	2007	Technical University of Denmark , Denmark <i>Study centre : Risø National Laboratory for Sustainable Energy</i> , Roskilde, Denmark
Certificate course WAsP-Engineering	2007	'As above'
ISO 9001:2000 Certificate (Internal auditor)	2007	Det Norske Veritas (DNV) , Chennai
Diploma in Applied Pathology (Medical) <i>(University First Position)</i>	1998-1999	Guru Ghasidas University , Bilaspur, India <i>Study Centre : Govt. Science P/G College</i> , Bilaspur.
Sangeet Visarad-II (Diploma) (Tabla/Musical Instruments)	1990-1995	Indira Kala Sangit Vishwavidyalaya, Khairagarh, India. <i>Study Centre : Bhaskhande Sangeet Mahavidyalaya, Bilaspur, India</i>

Research Areas

The Earth's atmosphere is divided into four layers viz., Troposphere, Stratosphere, Mesosphere and Thermosphere on the basis of its thermal structure. However, there are continuous interactions among these layers through various physical processes leading to homogenization of the earth's atmosphere. Among these interactions, Stratosphere-Troposphere interactions are of paramount interest to atmospheric science community as intrusion of stratospheric ozone into the troposphere and water vapor intrusion from troposphere to stratosphere have important consequences in global climate and weather. The stratosphere-troposphere interactions form my core area of research with special emphasis on dynamical coupling between these two lowermost spheres of Earth's atmosphere through atmospheric turbulence, waves and convection. To achieve my research goals, I have been designing and conducting various experiments at three national institutes, i.e. National Atmospheric Research Laboratory (Gadanki), National Institute of Wind Energy (Chennai), and presently at Space Physics Laboratory of Vikram Sarabhai Space Centre (Trivandrum) to provide new insights into the stratosphere-troposphere interactions and associated dynamics using multi-platform experiments such as space based satellites (KALPANA, AURA-MLS, CALIPSO, TIMED/SABER, CloudSat, COSMIC, Megha-Tropique, INSAT-3D), ground based (MST and Meteor radars) and in situ (radiosonde/ozonesonde and tower measurements). In addition, wind resource assessment, which is a direct application of boundary-layer meteorology for societal benefit, for the extraction of wind energy over the entire country is also been carried out. The following are my scientific accomplishments.

Currents Research Interest includes- Tropopause dynamics, Stratosphere-troposphere exchange processes, atmospheric turbulence, gravity waves, tropical cyclones, Wind resource assessments.

Development activities : Designing and development of high power atmospheric radar

Programming Languages : C/C++, VC++, MATLAB, IDL

Societal Applications

- Application of Boundary-layer meteorology for regional wind resource assessment, siting of wind turbines, and short-term prediction of the wind resources. In this context, **First Indian WIND ATLAS** has been published; certainly empower equally the industries, academia and researches to exploit wind as a viable green power in India.
- Stratosphere-troposphere exchange processes have a global impact on climate change. Understanding these phenomenon will enhance our understanding and quantify its contribution in global climate change.
- Study on the broad spectra of atmospheric waves and oscillations will help in parameterize the global model for better prediction of convective system and monsoon.

Scientific Projects and Experiments

Project Name	Sponsorship	Year
<u>Principal Investigator</u>		
✓ Indian Wind Atlas	Ministry of New and Renewable Energy	2007-2010
✓ Study of Atmospheric Forcing and Responses (SAFAR) <i>Study of temperature sheets/structures at upper troposphere and lower stratosphere.</i>	Indian Space Research Organisation	2010-2012
✓ Troposphere-Stratosphere Exchange-Cyclone (TSE-C) Under Climate and Weather of Sun & Earth System (CAWSES-India Phase II) <i>The impact of tropical cyclone on troposphere-stratosphere exchange</i>	Indian Space Research Organisation	2010-2013
✓ Dynamics of Tropical Cyclone Motion (DynTCM) <i>Role of tropical cyclone on middle atmosphere</i>	Indian Space Research Organisation	2017-Cont.
<u>Co-Principal Investigator</u>		
✓ Re-Organization of Atmospheric Convection Experiment (RONAC) <i>Influence of Indian summer Monsoon in the formation and reorganization of convective systems</i>	Indian Space Research Organisation	2011-2012
✓ Sooryagrahan -2010 Campaign on Annular Solar Eclipse <i>Influence of annular solar eclipse on middle atmospheric dynamics</i>	Indian Space Research Organisation	2010
<u>Co-Investigator</u>		
✓ Tropical Tropopause Dynamics Experiments (TTD) <i>Study the dynamics of tropical tropopause over Indian region</i>	Indian Space Research Organisation	2011-2015
✓ MONsoon Tracking Experiment (MONTREX) <i>Study of various atmospheric dynamics governing the planetary atmosphere</i>	Indian Space Research Organisation	2016-Cont.
<u>Member</u>		
✓ Stratosphere-Troposphere Processes And their Role in Climate (SPARC) Data Assimilation and Reanalysis Intercomparison Programme (S-RIP) <i>Validation and improvements of global reanalysis data</i>	World Climate Research Programme (WCRP) under World Meteorological Organisation (WMO)	2014-Cont.
✓ Lidar Project under XII Five Year Plan <i>Designing and development of Lidar</i>	Indian Space Research Organisation	2012-Cont.
✓ VHF Radar project under XII Five Year Plan <i>Designing and development of high power 50 MHz atmospheric radar</i>	Indian Space Research Organisation	2012-Cont.

Awards and Honours

Academic Awards

- (1) INSA Young Scientist Medal- 2012 Indian National Science Academy (INSA), New Delhi
- (2) IETE Young Scientist Award- 2012 The Institution of Electronic and Telecommunication Engineers (IETE), New Delhi
- (3) Asia Pacific Young Scientist Award-2010 Asia-Pacific International Union of Radio Science, Japan
- (4) USRI -Young Scientist Award -2005 International Union of Radio Science (URSI), Belgium

Merit Awards

- (5) Certificate of Merit for MSc. Topper-2000 C.M.D.Post-Graduate College, Bilaspur, India
- (6) Certificate of Merit for University rank-2000 Guru Ghasidas University, Bilaspur, India

Best paper Awards

- (7) OCHAMP Best Paper Award -2012 Indian Institute of Tropical Meteorology, Pune
- (8) TWAS best paper/presentation Award-2016 The World Academy of Sciences (TWAS), and IISc, Bangalore
- (9) First prize in Technical Hindi Seminar-2016 Vikram Sarabhai Space Centre, ISRO, Trivandrum
- (10) Award for "ISRO Hindi seminar -2002" Space Application Centre, ISRO, Ahmedabad

Fellowship

- (11) Research Fellowship (2000-2005) Indian Space Research Organisation

Academic and Professional Responsibility

National

- ✓ Member for **Thumba Active Aperture VHF Radar**
- ✓ Member for **Integrated Lidar system**
- ✓ Doctoral review committee member of SPL for Research Fellows
- ✓ Member, Academic Committee, SPL, VSSC
- ✓ Research committee member of Cochin University of Science and Technology (CUSAT) for PhD students
- ✓ Conducting various field experiments/campaigns of ISRO
- ✓ Referee of Indian Journal Radio and Space Physics

International

- ✓ Core team member of SPARC (Stratosphere-troposphere Processes And their Role in Climate) Reanalysis Intercomparison Programme (S-RIP) of WCRP/WMO
- ✓ Referee of international journals : *Journal of Applied Meteorology Climatology, Radio Science, Journal Atmospheric and Solar Terrestrial Physics, Journal Geophysical Research, International Journal of Environmental Science, Annales Geophysicae, Atmosphere Measurement Techniques, IEEE- Transactions on Geoscience and Remote Sensing, Atmospheric Chemistry and Physics*

Recognized Guideship

- ✓ University of Kerala, Trivandrum
- ✓ Cochin University of Science and Technology, Kochi

Membership in Professional bodies

National

- ✓ **Fellow**, The Society of Earth Scientist-India, Lucknow
- ✓ **Life Member**, India Meteorological Society
- ✓ **Life Member**, ISRO Space Scientist Association
- ✓ **Life Member**, Kerala Academy of Sciences
- ✓ **Member**, Indian Science Congress

International

- ✓ **Associate Member**, Committee on Space Research (COSPAR)
- ✓ **Individual Member**, International Union of Radio Science (URSI)

Research Supervisions

- (1) PhD → 1 (ongoing)
- (2) M.Phil → 3
- (3) M.Sc. → 3
- (4) B.Tech → 2
- (5) INSA-NASI-IASc Summer Fellows → 3

Invited Talk / Lectures

National

- (1) Lectures on 'Atmospheric Dynamics' to SPL PhD scholars during doctoral course work, 2013-2016
- (2) Delivered lecture on 'Stratosphere-Troposphere exchange', at Second SERB School of Fundamentals of Radars for Atmospheric Research (FORFARII), conducted by Cochin University of Science and Technology, 17-21 February, 2014
- (3) Delivered a Talk on 'Introduction to Indian Wind Atlas : Present, Past and Future' on Science day celebration at St. Mary's College, Thoothukudi, on February 26, 2016.

International

- (4) Delivered lecture on 'Fundamental of Atmospheric Dynamics' at '18th International Training Course on Wind Turbine Technology and Applications' held at National Institute of Wind Energy, MNRE, Govt. of India, on 18 August 2016.
- (5) Delivered lecture on 'Fundamental of Atmospheric Dynamics' at '19th International Training Course on Wind Turbine Technology and Applications' held at National Institute of Wind Energy, MNRE, Govt. of India, on 6 February 2017.
- (6) A comprehensive study on stratosphere-troposphere exchange using Indian MST Radar at URSI, New Delhi.

Aboard visited for Scientific Meetings/Conferences/Workshops

Conference / Meeting	Venue	Funding Agency	Year
• 3 rd Stratosphere-troposphere Processes And their Role in Climate (SPARC) General Assembly	Victoria, Canada	WCRP/WMO	2004
• Modelling of Deep Convection and of Chemistry and their Roles in the Tropical Tropopause Layer	Victoria, Canada	WMO	2006
• RisØ National Laboratory for Sustainable Energy, DTU	Roskilde, Denmark	Govt. of India	2007
• RisØ National Laboratory for Sustainable Energy, DTU	Roskilde, Denmark	Govt. of India	2007
• RisØ National Laboratory for Sustainable Energy, DTU	Roskilde, Denmark	Govt. of India	2008
• 4 th SPARC General Assembly	Bologna, Italy	WCRP/WMO	2008
• Asia-Pacific Radio Science Conference	Toyama, Japan	WCRP/WMO	2010
• 5 th SPARC General Assembly	Queenstown, New Zealand	WMO & DST/INSA	2014
• SPARC / S-RIP Workshop-2014	Washington, USA	WCRP/WMO	2014
• SPARC / S-RIP Workshop-2015	Paris, France	WCRP/WMO	2015
• MST15 / iMST2 Workshop-2017	Tokyo, Japan	INSA	2017
• 42 nd COSPAR	Pasadena, USA	ISRO/COSPAR	2018

National and International Collaborations

National

- (1) Collaboration with **National Atmospheric Research Laboratory (NARL)**, Dept. of Space, Gadanki to study Stratosphere-Troposphere Exchange and Tropopause dynamics.
- (2) Collaboration with **Indian Institute of Tropical Meteorology (IITM)**, Ministry of Earth Science, Pune to study Instability and turbulence over convective regions.
- (3) Collaboration with **National Institute of Wind Energy (NIWE)**, Ministry of New and Renewable Energy to study wind resource assessment over Indian region.

International

Collaboration with **Hokkaido University, Japan** for the project entitled, 'SPARC (Stratosphere Troposphere Processes And their Role in Climate) Data Assimilation and Reanalysis Intercomparison Project (**S-RIP**)' under World Climate Research Programme (WCRP) of World Meteorological Organisation (WMO). This project will bring out a reference book on '*Uses and Intercomparison of Reanalysis Data*' which will be published by WCRP/WMO by 2018. Undersigned has been identified as core team member of S-RIP and a contributory author.

Research Publications

See Enclosure-1

Google Scholar : <http://scholar.google.co.in/citations?user=kVH3XglAAAAJ&hl=en>
Scopus ID : 7406322937
Research Gate : https://www.researchgate.net/profile/Siddarth_Das
Orcid ID : <https://orcid.org/0000-0002-6973-2774>
Expert Data based : <https://vidwan.inflibnet.ac.in/profile/57913>

Enclosure-1

List of Publications

Referred Journal Publications

- (1) Uma, K. N., *Siddarth Shankar Das*, K. K. Kumar, K. V. Subrahmanyam, and G. Ramkumar (2018), Characterization of internal inertia-gravity wave over the low latitude: Results from the RONAC-2012 campaign, *Meteorology and Atmospheric Physics* (in-press) (IF : 1.34)
- (2) *Siddarth Shankar Das*., K. V. Suneeth • M. Venkat Ratnam • I. A. Girach Subrata Kumar Das (2018), Upper tropospheric ozone transport from the sub-tropics to tropics over the Indian region during Asian summer monsoon, *Climate Dynamics*, doi : 10.1007/s00382-018-4418-6. (IF : 4.2)
- (3) Das, S. K., *Siddarth Shankar Das*, K. Saha, U.V.M. Krishna, and K. K. Dani (2017), Investigation of Kelvin-Helmholtz Instability in the boundary layer using Doppler lidar and radiosonde data, *Atmospheric Research*, 202, 105-111, doi : 10.1016/j.atmosres.2017.11.013 (IF = 3.78).
- (4) Suneeth, K.V., *Siddarth Shankar Das*, and S. K. Das (2017), Diurnal variability of the global tropical tropopause: results inferred from COSMIC observations, *Climate Dynamics*, 49,3277-3292, doi : 10.1007/s00382-016-3512-x. (IF = 4.7, CI =3).
- (5) *Siddarth Shankar Das*, 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 (2012), *Quarterly Journal of Royal Meteorological Society*, 142 : 2168-2179, doi : 10.1002/qj.2810. (IF = 3.7, CI =6)
- (6) Ratnam, M.V., S.R.Babu, *Siddarth Shankar Das*, G. Basha, B.V.Krishnamurthy, and B. Venkateswara Rao (2016): Effect of tropical cyclones on the Stratosphere-Troposphere Exchange observed using satellite observations over north Indian Ocean, *Atmospheric Chemistry and Physics*, 16, 8581-8591, doi :10.5194/acp-16-8581-2016. (IF = 5.3, CI =5)
- (7) Uma, K. N., and *Siddarth Shankar Das*, Quantitative and Qualitative Assessment of Diurnal Variability in the Tropospheric Humidity using SAPHIR on-board Megha-Tropiques (2016), *Journal of Atmospheric and Solar-Terrestrial Physics* (2016), 146, 89-100, doi :10.1016/j.jastp.2016.05.009. (IF = 1.46, CI =1)
- (8) *Siddarth Shankar Das*, 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. Sijkumar and G. Ramkumar (2016), Influence of Tropical Cyclones on Tropospheric Ozone: Possible Implications (2016), *Atmospheric Chemistry and Physics*, 16, 4837-4847, doi : 10.5194/acp-16-1-2016. (IF = 5.3, CI =10)
- (9) *Siddarth Shankar Das*, 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. Sijkumar and G. Ramkumar (2015),Geetha Ramkumar, Influence of Tropical Cyclones on Tropospheric Ozone: Possible Implication, *Atmospheric Chemistry and Physics-Discussion*, 15, 1-19, doi : 10.5194/acpd-15-1-2015. (IF = 5.3, CI =4)

- (10) **Siddarth Shankar Das**, K. N. Uma, V.N.Bineesha, K.V.Suneeth, and G. Ramkumar (2015), Four decadal climatological intercomparison of Rocketsonde and Radiosonde with different reanalysis data : Results from Thumba Equatorial Station, *Quarterly Journal of Royal Meteorological Society*, 142, 91-101, doi : 10.1002/qj.2632. (IF = 3.7, CI =2)
- (11) Sunilkumar S.V, M. Muhsin, K. Parameswaran, M. Venkat Ratnam, Geetha Ramkumar, K. Rajeev, B. V. Krishna Murthy, K.V. Sambhu Namboodiri, K.V. Subrahmanyam, K. Kishore Kumar, **Siddarth Shankar Das** (2015), Characteristics of Turbulence in the Troposphere and Lower Stratosphere over the Indian Peninsula, *Journal of Atmosphere and Solar-Terrestrial Physics*, doi/10.1016/j.jastp.2015.07.015. (IF = 1.46, CI =8)
- (12) Das, S. K., Sachin M. Deshpande, **Siddarth Shankar Das**, Mahen Konwar, Kaustav Chakravarty and Madhu Chandra Reddy Kalapureddy (2015), Temporal and structural evolution of a tropical monsoon cloud system: A case study using X-band Radar, *Journal of Atmosphere and Solar-Terrestrial Physics*, doi : 10.1016/j.jastp.2015.08.009. (IF = 1.46, CI =3)
- (13) **Siddarth Shankar Das**., 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, *Indian Journal Radio and Space Physics*, 43, PACS No. 92.60.hd;92.60.hf;92.60.hh. (IF = 0.3)
- (14) Uma, K. N., S. K. Das, and **Siddarth Shankar Das** (2014), A climatological perspective of water vapour at the UTLS region over different global monsoon regions : Observations inferred from the AURA-MLS and reanalysis data, *Climate Dynamics*, 43, 407-420, doi: 10.1007/s0038-014-2085-9. (IF = 4.7, CI =16)
- (15) Ramkumar, G., K. V. Subrahmanyam, K. K. Kumar, **Siddarth Shankar Das**, D. Swain, S. V. Sunilkumar, K.V.S.Namboodri, K. N. Uma, V. S. Babu, S. R. John, and A. Babu (2013), First observational study of eclipse induced variations in the horizontal winds simultaneously in the troposphere-stratosphere-mesosphere-lower thermosphere region over equatorial station Thumba (8.5°N, 77°E), *Earth, Planet and Space*, doi:10.5047/eps.2012.12.007. (IF = 3.05, CI =2)
- (16) Uma, K.N., S.K.Das, **Siddarth Shankar Das**, and K.K.Kumar (2013), Aura-MLS observations of water vapour entering the stratosphere over the north Bay of Bengal and east equatorial Indian ocean, *Journal of Terrestrial, Atmospheric and Oceanic Sciences*, doi: 10.3319/TAO.2012.11.06.01(A). (IF = 0.56, CI =8)
- (17) **Siddarth Shankar Das**, K. Kishore Kumar, and G. Ramkumar (2013), First observations of quasi 120 day oscillation in Mesospheric winds and temperature: Observations inferred from Meteor Radar, *Radio Science*, 48, doi:10.1002/rds.20037. (IF = 1.27, CI =3)
- (18) Uma, K. N., K. K. Kumar, and **Siddarth Shankar Das** (2013), On the migrating and non-migrating diurnal and semidiurnal tides over a tropical and equatorial station, *Indian Journal Radio and Space Physics*, 42,340-355.pacs no. 92.60.hh;92.60.Nv;92.60.jf. (IF : 0.3, CI =1)
- (19) Das, S. K., **Siddarth Shankar Das**, C. W. Chiang, and J. B. Nee (2013), Descending cirrus associated with planetary scale disturbance : An observational study from lidar, radiosonde and reanalysis data, *Journal of atmospheric and Solar-Terrestrial Physics*, 104, 137-147, doi : http://dx.doi.org/10.1016/j.jastp.2013. 08.019. (IF = 1.46, CI =1)

- (20) *Siddarth Shankar Das*, K. K. Kumar, S. K. Das, C.Vineeth, T. K. Pant and G. Ramkumar (2012), Variability of mesopause temperature derived from two independent methods using meteor radar and its comparison with SABER and EOS MLS and a collocated multi-wavelength dayglow photometer over an equatorial station, Thumba (8.5°N, 76.5°E), *International Journal of Remote sensing*, 33,14, doi : 10.1080/01431161.2011.643461. (IF = 1.64, , CI =8)
- (21) Uma, K. N., K. K. Kumar, *Siddarth Shankar Das*, M. Satyanarayana, T. N. Rao (2012), On the Vertical Distribution of Mean Vertical Velocities in the Convective Regions during Wet and Dry Spells of Indian Summer Monsoon over Gadanki, *Monthly Weather Review*, 140, 398-410, doi: 10.11075/MWR-D-11-00044.1. (IF =3.25, CI =5)
- (22) *Siddarth Shankar Das*, K. N. Uma, and S. K. Das (2012), MST radar observations of short-period gravity wave during the passage of tropical cyclone: Obstacle effect as triggering mechanism, *Radio Science*, 47, RS2019, doi : 10.1029/2011RS004840. (IF : 1.27, , CI =15)
- (23) Das, S. K., *Siddarth Shankar Das*, C.W.Chiang, K. K. Kumar and J.B.Nee (2012), Variability in tropopause height and its temperature on different time scales: An observational study over Banqiao, Taiwan, *Journal of Atmospheric and Solar-Terrestrial Physics*, 81-82, 1-8, doi :10.1016/j.jastp.2012.03.013. (IF = 1.46, CI =5)
- (24) Subrahmanyam, K. V., G. Ramkumar, K. K. Kumar, D. Swain, S. Sunilkumar, *Siddarth Shankar Das*, R.K.Choudhary, K. V. S. Namboodiri, K. N. Uma, S. B. Veena,S. R. John, and A. Babu (2011), Temperature perturbation in the troposphere-stratosphere over Trivandrum during Solar eclipse 2009/2010, *Annales Geophysicae*, 29, 275-282, doi: 10.5194/angeo-29-275-2011. (IF = 1.73, CI =6)
- (25) *Siddarth Shankar Das*, S. Sijikumar, and K. N. Uma (2011), Further investigation on stratospheric air intrusion into the troposphere during the episode of tropical cyclone : Numerical simulation and MST radar observations, *Atmospheric Research*, 101, 928-937, doi:10.1016/j.atmosres. 2011.05.023. (IF = 3.78, CI =7)
- (26) Jain, A. R., V. Panwar, T. K. Mandal, V. R. Rao, A. Goel, R.Gautam, *Siddarth Shankar Das*, and S.K.Dhaka (2010), Mesoscale convection system and occurrence of extreme low tropopause temperature : observations over Asian summer monsoon region, *Annales Geophysicae*, 28, 927-940, doi:10.5194/angeo-28-927-2010. (IF = 1.73, CI =15)
- (27) *Siddarth Shankar Das*, A.K.Ghosh, K.Satheesan, A.R.Jain,and K. N. Uma (2010), Characteristics of atmospheric turbulence in terms of background atmospheric parameters inferred using MST radar at Gadanki (13.5°N, 79.2°E), *Radio Science*, 45, RS4008, doi:10.1029/2009RS004256. (IF = 1.27, CI =2)
- (28) *Siddarth Shankar Das*, K. K. Kumar, S. B. Veena, and G. Ramkumar (2010), Simultaneous observation of quasi 16-day wave in the mesospheric winds and temperature over low-latitude with SKiYMETradar, *Radio Science*, 45, RS6014, doi:10.1029/2009RS004300. (IF = 1.27, CI =11)
- (29) *Siddarth Shankar Das*, K.K.Kumar, and K. N. Uma (2010), MST radar investigation on inertia-gravity waves associated with tropical depression in the upper troposphere and lower stratosphere over Gadanki (13.5°N, 79.2°E), 72, 1184-1194, *Journal of Atmospheric and Solar-Terrestrial Physics*, doi:10.1016/j.jastp.2010.07.016. (IF = 1.46, CI =15)

- (30) Abhilash, S., K. Mohankumar, *Siddarth Shankar Das*, and K. K. Kumar (2010), Vertical structure of tropical mesoscale convective systems : observations using VHF radar and cloud resolving model simulations, *Meteorology and Atmospheric Physics*, doi :10.1007/s00703-010-0087-7. (IF = 1.17, CI =2)
- (31) *Siddarth Shankar Das*, (2009): A new perspective on MST radar observations of stratospheric intrusions into-troposphere associated with tropical cyclone, *Geophysical Research Letter*, 36,L15821, doi:10.1029/2009GL039184. (IF = 4.21, CI =21)
- (32) *Siddarth Shankar Das*, A. K.Patra, D. Narayana Rao (2008), VHF Radar echoes in the vicinity of Tropopause during the passage of Tropical Cyclone: First observations from the Gadanki MST radar, *Journal of Geophysical Research*,113, D09113, doi:10.1029/2007JD009014. (IF = 3.32, CI =12)
- (33) *Siddarth Shankar Das*, A.R.Jain, K.K.ishore Kumar, and D.Narayana Rao (2008), Diurnal variability of the tropical tropopause: Significance of VHF radar measurements, *Radio Science*, 43, RS6003, doi:10.1029/2008RS003824. (IF = 1.27, CI =19)
- (34) Sreevalsan, E., *Siddarth Shankar Das*, R.Sasikumar and M.P.Ramesh (2007), Wind Farm Site Assessment Using Measure-Correlate-Predict (MCP) Analysis, *Wind Engineering*, 31, 2,111-116.doi: 10.1260/030952407781494485. (IF = 0.5, CI =16)
- (35) Jain, A. R., *Siddarth Shankar Das*, Tuhin Kumar Mandal and A. P. Mitra (2006),Observations of extremely low tropopause temperatures over Indian tropical region during monsoon and post-monsoon seasons : Possible implications, *Journal of Geophysical Research*, 111, D7, doi : 10.1029/2005JD005850. (IF = 3.32, , CI =30)
- (36) *Siddarth Shankar Das*, K. Kishore Kumar, A. R. Jain, D. Narayana Rao, K. Nakamura (2004), Observations of trapped humidity layer and Kelvin-Helmholtz instability using UHF Radar and GPS-Sonde. *Radio Science*, 39, RS2024, doi:10.1029/2003RS003003. (IF = 1.27, CI :4)
- (37) Ghosh, A.K., *Siddarth Shankar Das*, A.K.Patra, D.NarayanaRao and A.R.Jain (2004), Aspect sensitivity in the VHF radar backscatters studied using simultaneous observations of Gadanki MST radar and GPS sonde, *Annales Geophysicae*, 22:4013–4023, doi:10.5194/angeo-22-4013-2004. (IF = 1.73, CI =8)

List of book Publications

- (1) E. Sreevalsan, *Siddarth Shankar Das*, R. Sasikumar, G. Arivukkodi, and J. Badger (2010) :Indian Wind Atlas (2010) :Published by Govt. of India., Ministry of New and Renewable Energy, Centre for Wind Energy Technology, Chennai, India, ISBN : 978-81-909823-0-6.
- (2) *Siddarth Shankar Das* (2012) : Chapter entitled, ‘Characteristics of the quasi-16 day wave in the Mesosphere and Lower Thermosphere (MLT) region: A review over an Equatorial station Thumba (8.5oN, 76.5oE)’ in book ‘Modern Climatology’, InTech - Open Access Publisher, University Campus STeP Ri,Slavka Krautzeka 83/A, 51000 Rijeka, Croatia, ISBN 979-953-51-0095-9, doi : 10.5772/33641.

- (3) *Siddarth Shankar Das*, and A. R. Jain (2011) : UHF/VHF radars studies on the atmospheric stable and turbulent layers, LAP Lambert Academic Publishing, ISBN 978-3-8465-5828-7.

List of refereed proceeding

- (1) *Siddarth Shankar Das*, P.G.Anu Krishna, K. N. Uma, and S. Suheela (2012), Evidence of extremely low tropopause temperature over Asian monsoon region and its impact on stratosphere-troposphere exchange inferred from SHADOZ campaign, International conference on 'Proceeding of Opportunities and Challenges in Monsoon Prediction in a Changing Climate(OCHAMP-2012), Pune.
- (2) K. N. Uma, T. N. Rao, K. K. Kumar and *Siddarth Shankar Das* (2012), Studies on the characteristics of tropical convection and its associated dynamics during the Indian summer monsoon, Proceeding of Opportunities and Challenges in Monsoon Prediction in a Changing Climate(OCHAMP-2012), Pune. (Received Best paper Award for Young Scientist)
- (3) *Siddarth Shankar Das* (2010), VHF radar studies on upper troposphere and lower stratosphere (UTLS) region during the passage of tropical Cyclone/Depression, Proc. Asia-Pac. Rad.Sci. Con., Y0005, ISBN 978-4-88552-250-5 C3855. (URSI Received Young Scientist Award)
- (4) T. K. Pant, G. Ramkumar, K. K. Kumar, R. K. Choudhary, G. Manju, K. V. Subrahmanyam, *Siddarth Shankar Das*, S. V. Sunilkumar, M. M. Hossian, N. Mridula, P. Sreeleatha, P. Pradeep Kumar, N. Naik, K.V.S.Namboodiri, and R.K.Manchanda (2010), Synthesis report on the response of low-latitude middle and upper atmosphere to the annular solar eclipse of 15 January 2010, Proceeding of National Workshop: Result of Solar Eclipse, Trivandrum.
- (5) Geetha Ramkumar, K. V. Subrahmanyam, K. K. Kumar, Debadatta Swain, *Siddarth Shankar Das*, S. V. Sunilkumar, and K.V.S.Namboodiri (2010), First observational study of eclipse induced variations in horizontal winds in the troposphere-stratosphere-mesosphere-lower thermosphere regions over Trivandrum, Proceeding of National Workshop: Result of Solar Eclipse, Trivandrum.
- (6) K. V. Subrahmanyam, Geetha Ramkumar, K. K. Kumar, Debadatta Swain, S. V. Sunilkumar, *Siddarth Shankar Das*, and K.V.S.Namboodiri (2010), Temperature perturbations in the troposphere-stratosphere at Trivandrum during the solar eclipse 2010, Proceeding of National Workshop: Result of Solar Eclipse, Trivandrum.
- (7) *Siddarth Shankar Das*, K. K. Kumar, and Geetha Ramkumar (2009) :Comparison of Mesospheric temperature derived from All-SKiYMET meteor radar and SABER observations over equatorial station Thumba (8.5oN, 76.5oE, 0.5oN diplat), Proceeding of 12th International workshop on technical and scientific aspect of MST radar, London, Canada.
- (8) *Siddarth Shankar Das*, K. K. Kumar, S. K. Das, and K. N. Uma (2009): VHF radar observations of Inertia-gravity wave signature in the tropical tropopause height during the passage of a tropical depression, Proceeding of 12th International workshop on technical and scientific aspect of MST radar, London, Canada.

- (9) Kumar, K.K., D. Swain, *Siddarth Shankar Das*, and K. V. Subrahmanyam (2009): Meteor radar observations of MLT region gravity wave variances during passage of deep convective systems, Proceeding of 12th International workshop on technical and scientific aspect of MST radar, London, Canada.
- (10) *Siddarth Shankar Das*, S. K. Das, K. N. Uma, K. K. Kumar, and A. R. Jain (2008) : Characteristics of Kelvin-Helmholtz instability (KHI) observed using UHF/VHF radars, Proceeding of 4th General Assembly meeting on Stratospheric Process and Role in the Climatology (SPARC-2008) at Bologna, Italy.
- (11) *Siddarth Shankar Das*, K. Kishore Kumar, A. R. Jain, D. Narayana Rao, A.K.Ghosh, K. Nakamura (2003), VHF Radar Observations of Temperature Sheets in the Stratospheric-Tropospheric Region, Proc.X-Int.Wor. Tech.- Sci. Asp. MST Radar, pp.58-61.
- (12) Ghosh, A.K., *Siddarth Shankar Das*, V.K. Anandan, D.NarayanaRao, A.R.Jain (2003), Aspect Sensitive Characteristics of Radar backscattering at VHF: Simultaneous MST Radar and GPS Sonde measurements, Proc.X-Int.Wor. Tech.- Sci. Asp. MST Radar, pp. 58-61, pp.70-73.

List of scientific/technical reports to Govt. of India

- (1) *Siddarth Shankar Das*, and R. K. Chaudhary (2018), Technical report on survey of MST/ST radars and simulation of the radiation pattern of antenna array for the active aperture VHF Thumba Radar (AVTAR), Space Physics Laboratory, Vikram Sarabhai Space centre, ISRO, Trivandrum. Ref. No. SPL-TR-01-2017.
- (2) E.Sreevalsan, K. Bhoopathi, *Siddarth Shankar Das*, and Arul Mozhli (2009) : Scanning of wind profile in Palghat Gape (Kerala) by using Sodar, Ministry of New and Renewable Energy, Govt. of India. Ref.No. C-WET/WRA/027/2004-2005.
- (3) E.Sreevalsan, *Siddarth Shankar Das*, and M. P. Ramesh (2006) :Detail Project Report on Wind-Diesel Hybrid Project for Lakshadweep Island, M/s.Administration of the Union Territory of Lakshadweep, Govt. of Union Territory,Kavaratti. Ref.No.C-WET/WRA/89/2002-2003.
- (4) E.Sreevalsan, *Siddarth Shankar Das*, and M. P. Ramesh (2006) :Background paper on Offshore wind for an energy assessment study for Technology, M/s.Information, Forecasting and Assessment Council (TIFAC), Ministry of Information Technology, Govt. of India, New Delhi. Ref.No.01/C-WET/WRA/2006-2007.
- (5) E.Sreevalsan, and *Siddarth Shankar Das* (2006): Micro-Survey of wind resources in and around Andhiyur wind monitoring station, Tamilnadu, M/s.Tamilnadu Energy Development Agency (TEDA), Govt. of Tamilnadu, Chennai. Ref.No.19/C-WET/WRA/2006-2007.
- (6) E.Sreevalsan, and *Siddarth Shankar Das* (2006): Micro-Survey of wind resources in and around Tannirpandal wind monitoring station, Tamilnadu for M/s.Tamilnadu Energy Development Agency (TEDA), Govt. of Tamilnadu, Chennai. Ref.No.20/C-WET/WRA/2006-2007.

- (7) E.Sreevalsan, and **Siddarth Shankar Das** (2006): Micro-Survey of wind resources in and around Thalaiyuthu wind monitoring station, Tamilnadu for M/s. Tamilnadu Energy Development Agency (TEDA), Govt. of Tamilnadu, Chennai. Ref.No.21/C-WET/WRA/2006-2007.
- (8) **Siddarth Shankar Das** (2006) :Report on Verification of procedure of wind monitoring at Palsori, Ratlam Dist., Madhya Pradesh, M/s.Suzlon Energy Ltd., Pune. Ref.No.04/WRA/CP/2006-2007.
- (9) **Siddarth Shankar Das** (2007) :Report on Verification of Procedure of Wind Monitoring at Rathedi of Dewas District, Madhya Pradesh, M/s.Enercon India Ltd., Mumbai. Ref.No.16/WRA/CP/2006-2007.
- (10) **Siddarth Shankar Das** (2007) :Report on Verification of Procedure of Wind Monitoring at Sumana of Jamnagar District, Gujarat, M/s.Enercon India Ltd., Mumbai. Ref.No. 14/WRA/CP/2006-2007.
- (11) **Siddarth Shankar Das** (2007) :Report on Verification of Procedure of Wind Monitoring at Tiwari of Jodhpur District, Rajasthan, M/s.Enercon India Ltd., Mumbai. Ref.No.15/WRA/CP/2006-2007.
- (12) **Siddarth Shankar Das** (2007) :Report on Verification of Procedure of Wind Monitoring at Jakhau, BhujDist, Gujarat, M/s. Suzlone Energy Limited (India), Pune. Ref.No.C-WET-WR-CF-02-2008-2009.
- (13) E.Sreevalsan, and **Siddarth Shankar Das** (2008): Micrositing for wind farms in Tirumala Hills for M/s. Tirumala-TiruaptiDevasthan (TTD), Govt. of Andhra Pradesh, Tirupati. Ref.No. C-WET/WRA/027/2007-2008.
- (14) E.Sreevalsan, and **Siddarth Shankar Das** (2008): Micro-Survey of wind resources in and around Perampukettimedu, M/s. Agency for Non-Conventional Energy & Rural Technology (ANERT), Govt. of Kerala, Trivandrum. Ref.No.C-WET/WRA/003/2007-2008.
- (15) E.Sreevalsan, and **Siddarth Shankar Das** (2008): Micro-Survey of wind resources in and around Panchalimedu, M/s. Agency for Non-Conventional Energy & Rural Technology (ANERT), Govt. of Kerala, Trivandrum. Ref.No.C-WET/WRA/003/2007-2008.
- (16) E.Sreevalsan, and **Siddarth Shankar Das** (2008): Micro-Survey of wind resources in and around Tolanur, M/s. Agency for Non-Conventional Energy & Rural Technology (ANERT), Govt. of Kerala, Trivandrum. Ref.No.C-WET/WRA/003/2007-2008.

List of Thesis / Dissertation / Academic projects

PhD (Physics/ongoing)

Suneeth, K.V., *Studies on the variability of tropical tropopause and its implication in stratosphere-troposphere exchange*, **Cochin University of Science and Technology**, Kochi, March 13, 2015.

M.Phil (Physics)

1. Bineesha,V.N., *A comprehensive study on intercomparison of the global reanalysis data sets with radiosonde and rocket sounding in the tropical atmosphere*, July-2014, Nesamony Memorial Christian College, Marthandam, Kanyakumari, affiliated to *Manonmanium Sungaranar University*, Tirunelveli.
2. Suheela, S., *Seasonal characteristics of Kelvin-waves in the Mesosphere and Lower Thermosphere (MLT) over an equatorial station Thumba using Meteor wind Radar*, October-2011, *University of Kerala*, Trivandrum.
3. Anu Krishna P.G., *Stratosphere-Troposphere Exchange in the tropical and subtropical regions*, October-2011, *University of Kerala*, Trivandrum.

M.Sc. (Physics)

1. Nikhil, A.C., A detailed study on wind energy resource assessment in and around Thumba Equatorial Rocket Launching Station (TERLS) using tower observations,May-2015, M.E.S Kalladi College, Mannarkkad, Palakkad, *University of Calicut*, Calicut.
2. Shihabudheen, K., A detailed study on wind power production in and around Vizhinjam Port, Trivandrum using tower observations, M.E.S Kalladi College, Mannarkkad, Palakkad, *University of Calicut*, Calicut.
3. Aparna, D. P (2016), Seasonal characteristics of water vapour in the middle atmosphere over the equatorial station Thumba, July 2016, Govt. Victoria College, Palakkad under University of Calicut.
4. Jubie Raju (2017), Study on diurnal variability of temperature over India using INSAT-3DR satellite measurements, Department of Physics, Christian College, Chengannur under to Kerala University.

B.Tech

Sameer and Gautam, V.K., Study on the Thermal Structure of Middle Atmosphere using SABER/TIMED, August-2009, *Indian Institute of Space Science and Technology*, Trivandrum.

Academic (INSA/NASI/IAS) Summer Fellow

1. Girish, V (2013), Study of cyclone generated short-period gravity waves and tidal oscillation in the mesosphere and lower thermosphere (MLT) region using SKiYMET meteor wind radar, July-2013, B.Tech. (Mechanical), S.S.N. College, *Anna University*, Chennai (INSA-NASI-IASc Academy Fellowship).
2. Shibashis Guru (2016), Thermal structure of the Martian atmosphere, August 2016, BSc (Geography) Dept. of Applied Geography, Ravenshaw University, Cuttack, Odisha.
3. Arun Nair (2018), Study on the three dimensional structure of winds and precipitation during Cyclone "Ockhi. (University of Hyderabad), IAS-INSA-NASI Summer Research Fellowship Program.