S. Sijikumar

Scientist/Engineer SE
Space Physics Laboratory
Vikram Sarabhai Space Centre
Indian Space Research Organisation
Thiruvananthapuram, INDIA

E-mail : s_sijikumar[at]vssc[dot]gov[dot]in

Research Interests

- Monitoring and modelling of climate in the Earth System on a multitude of temporal and spatial scales using observational data and numerical models. Monsoon Variabilities and its modelling.
- Investigation of the dynamic and thermodynamic processes in the troposphere by combining numerical modelling and observations.
- Estimation of CO2 fluxes over India using atmospheric transport models in combination with observations from space and ground based instruments.

Education

- ***Ph.D in Atmospheric Sciences, 2003***
  Cochin University of Science and Technology, Kochi, India
- ***M.Sc. Space Physics, 1994***
  Andhra University, Visakapatnam, India
- ***B.Sc. Physics, 1991***
  Univerisity of Kerala, Thiruvananthapuram, India

Professional Background

Scientist **February 2008 to present**

Scientist at Space Physics Laboratory, Vikram Sarabhai Space Centre, Thiruvananthapuram

Post Doctoral Fellow **October 2004 - February 2008**

Post–doctoral Research Fellow at Centre de Recherches de Climatologie, Universite de Bourgogne, Dijon, France.

Research Associate **December 2003 - September 2004**

Research Associate in Atmospheric Modeling group at CSIR - Center for Mathematical Modelling and Computer Simulation, Bangalore, India.

Research Student **August 1996 - April 2003**

Ph.d student in Atmospheric Sciences at Department of Atmospheric Sciences, Cochin University of Science Technology, Kochi, India.

Membership in Professional bodies.

COSPAR Associate (Since 2012)

Life member, Indian Meteorological Society.

Academic activities.

PhD thesis supervision - 1 (Ongoing)

Recognised PhD guide at University of Kerala

Reviewer for International and national Journals

Publications in peer-reviewed journals

1. **Sijikumar. S**, S. Aneesh, and K. Rajeev: Multi-year model simulations of mineral dust distribution and transport over the Indian subcontinent during summer monsoon seasons *Meteorol Atmos Phys,* DOI 10.1007/s00703-015-0422-0, 2016

2. Aneesh. S and **S. Sijikumar** : Changes in the south Asian monsoon low level jet during recent decades and its role in the monsoon water cycle, *Journal of Atmospheric and Solar-Terrestrial Physics*, pp. 47-53, DOI:10.1016/j.jastp.2015.12.009, 2016.

3. Sunilkumar. S. V., M. Muhsin, M. Emmanuel, G. Ramkumar, K. Rajeev, **S.Sijikumar**: Balloon-borne cryogenic frost-point hygrometer observations of water vapour in the tropical upper troposphere and lower stratosphere over India: First results *Journal of Atmospheric and Solar-Terrestrial Physics*, 140, 86-93, 2016.

4. P.M. Muraleedharan, S. Prasanna Kumar, K. Mohanakumar, **S. Sijikumar**, K.U. Sivakumar, Teesha Mathew: Observational Evidence of Mixed Rossby Gravity Waves at the Central Equatorial Indian Ocean, *Meteorol Atmos Phys,*, 127(4), 407-417, DOI:10.1007/s00703-015-0376-2, 2015.

5. 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*, 120(1-2), 287-298, DOI:10.1007/s00704-014-1168-1, 2015.

6. Das, S.S., M. V. Ratnam, K. N. Uma, K. V. Subrahmanyam, I.A. Girach, A. K. Patra,S. Aneesh, K.V. Suneeth, K. K. Kumar, A.P. Kesarkar, **S. Sijikumar** and G. Ramkumar : Influence of Tropical Cyclones on Tropospheric Ozone: Possible Implication, *Atmospheric Chemistry and Physics-Discussion*, 15, 19305-19323, http://dx.doi.org/10.5194/acpd-15-19305-2015, 2015.

7. **Sijikumar, S.**, Liji John and K. Manjusha: Sensitivity study on the role of Western Ghats in simulating the Asian summer monsoon characteristics *Meteorol Atmos Phys.* 120(1-2), 55-60, DOI 10.1007/s00703-013-0238-8, 2013.

8. **Sijikumar, S.** and K. Rajeev: Role of the Arabian Sea Warm Pool on the Precipitation Characteristics during Monsoon Onset Period *J. Climate* DOI: 10.1175/JCLI-D-11-00286, 2011.

9. Anish Kumar M. Nair, K. Rajeev, **S. Sijikumar**, and S. Meenu: Characteristics of a persistent "pool of inhibited cloudiness" and its genesis over the Bay of Bengal associated with the Asian summer monsoon *Ann. Geophys.*, 29, 1247–1252, doi:10.5194/ angeo-29-1247-2011, 2011

10. N. Vigaud, P. Roucou, B. Fontaine, **S. Sijikumar** and S. Tyteca : WRF/ARPEGE-CLIMAT simulated climate trends over West Africa *Clim Dyn* 36, 925–944, DOI 10.1007/s00382-009-0707-4, 2011

11. Siddarth Shankar Das, **S. Sijikumar** and K.N. Uma: 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, 2011

12. Marina Aloysius, **S. Sijikumar**, S S Prijith, Mannil Mohan and K Parameswaran: Role of dynamics in the advection of aerosols over the Arabian Sea along the west coast of peninsular India during pre-monsoon season: A case study based on satellite data and regional climate model *J. Earth Syst. Sci.* 120, No. 2, pp. 269–279, 2011

13. D. Bala Subrahamanyam, Radhika Ramachandran, S. Indira Rani, **S. Sijikumar**, T. J. Anurose and Asish Kumar Ghosh: Location-specific weather predictions for Sriharikota (13.72^{o}N, 80.22^{o}E) through numerical atmospheric models during satellite launch campaigns *Nat Hazards*, DOI 10.1007/s11069-011-9942-1

14. D. Bala Subrahamanyam, 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, India *Boundary-Layer Meteorol*, 141, 325–332, DOI 10.1007/s10546-011-9627-z, 2011

15. D. Bala Subrahamanyam, 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 the Atmospheric Boundary Layer Characteristics Over Thumba: A Case Study *Pure Appl. Geophys.*, DOI 10.1007/s00024-011-0336-9, 2011

16. Sandhya K. Nair, T. J. Anurose, D. Bala Subrahamanyam, N. V. P. Kiran Kumar, M. Santosh, **S. Sijikumar**, MannilMohan, and K. V. S. Namboodiri: Characterization of the Vertical Structure of Coastal Atmospheric Boundary Layer over Thumba (8.5^{o}N, 76.9^{o}E) during Different Seasons *Advances in Meteorology*, Article ID 390826, 9 pages, doi:10.1155/ 2011/390826, 2011

17. Prince K. Xavier, Viju O. John, S. A. Buehler, R. S. Ajayamohan, and **S. Sijikumar**: Variability of Indian summer monsoon in a new upper tropospheric humidity data set. *Geophys. Res Lett* , Vol. 37, L05705, doi:10.1029/2009GL041861, 2010

18. Bernard Fontaine, Javier Garcia-Serrano, Pascal Roucou, Belen Rodriguez-Fonseca, Teresa Losada, Fabrice Chauvin, Sebastien Gervois, **S. Sijikumar**, Paolo Ruti, Serge Janicot: Impacts of warm and cold situations in the Mediterranean basins on the West African monsoon: observed connection patterns (1979?2006) and climate simulations. *Clim Dyn*, 35:95–114, DOI 10.1007/s00382-009-0599-3, 2010

19. **Sijikumar, S**., P. Roucou and B. Fontaine: Monsoon onset over Sudan-Sahel: Simulation by the regional scale model MM5, *Geophys. Res. Lett*, 33, L03814, doi:10. 1029/ 2005GL024819, 2006.

20. Goswami P., **S.Sijikumar** and A. Mandal: Seasonal cycle and intraseasonal oscillations in the interannual variability over the monsoon region, *Geophys. Res. Lett*, 32, L06810, doi:10.1029/2004GL022171, 2005.

21. Joseph P. V. and **S.Sijikumar**: Intraseasonal Variability of Low Level Jetstream of Asian Summer Monsoon. *J. Climate*, Vol. 17, 1449-1458, 2004.

22. Annes,V.H., **S.Sijikumar** and K. Mohankumar: Midlatitude-tropics interactions as seen from MST radar observations at Gadanki (13.5^{o}N, 79.2^{o}E) during winter, *Indian J. Rad. Space Phys.*, 29 ,192-198,2000

Monographs

S. Sijikumar, K. Mohankumar and P.V Joseph, Low Level Jetstream of Asian Summer Monsoon and its Variability, VDM Verlag Dr. Muller ISBN: 978-3-639-36748-5 , 2011