CURRICULUM VITAE

Dr. Shravan Kumar Muppa

CONTACT DETAILS

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EDUCATION

2011	Ph.D. Physics, Department of Physics, Sri Venkateswara University, Tirupati, and National Atmospheric Research Laboratory, India Dissertation: "A study on the tropical atmospheric boundary layer dynamics over a complex terrain using Doppler sodar". Advisors: Dr V.K. Anandan, Prof. P.Narasimha Reddy
2006	M.Sc. Physics, Osmania University, Hyderabad, India. Specialization: Electronics and Instrumentation
2004	B.Sc**.** Mathematics, Physics, Computer Sciences, Osmania University, Hyderabad, India

PROFESSIONAL AFFILIATIONS

2013 March-2019	Post doctoral fellow, Institut für Physik und Meteorologie, Universität Hohenheim, Garbenstraße 30, Stuttgart- 70599, Deutschland. Project: High definition clouds and precipitation for advancing climate prediction HD(CP)^2, funded by German Research Ministry (BMBF) under the project number 01LK1212A
2012 Jan-2013	Post Doctoral Fellow, Department of Natural Resources and the Environment, University of Connecticut, Storrs, CT-06269, United States of America. Project: Measurement and Modeling of Aerodynamic Interactions between Tree-Sway Motion and Turbulence in and above a Forest Canopy, funded by National Science Foundation, NSF-ATM-0840147

2011-2012	Research Associate, National Atmospheric Research Laboratory Gadanki, Pakala, Andhra Pradesh- 517112, India
2008-2011	Senior Research Fellow, National Atmospheric Research Laboratory, Gadanki, Pakala, Andhra Pradesh- 517112, India
2006-2008	Junior Research Fellow, National Atmospheric Research Laboratory Gadanki, Pakala, Andhra Pradesh- 517112, India

COMPUTER PROGRAMMING

Languages	:	C/C++, FORTRAN
Operating Platforms	:	WINDOWS, LINUX, UNIX
Packages	:	Matlab, IDL, Origin, Arc Map GIS, Statistica, Excel,
Software	:	Familiar with all PC word-processing and graphics, software and Internet tools

EXPERIENCE

- Operation and Measurements from instruments Differential-Absorptions-Lidar (DIAL), Temperature Raman Lidar
- Knowledge on various other atmospheric measurement sensors like Radar, Towers, automatic weather station, energy balance station and GPS Radio sonde
- Experience in running numerical weather prediction models (NWP) and large eddy simulations (LES), for example ICON on HPC environments
- Evaluation of Land Surface Modelling and Turbulence Parameterization Schemes used in NWP and LES models with high-resolution observation datasets
- Research and development of data processing techniques using ECMWF Reanalysis and other large datasets
- Major contribution in the installation and validation of the National Atmospheric Research Laboratory Doppler SODAR, Gadanki, India. Maintenance of the Doppler sodar system throughout my research period at NARL, Gadanki, India
- Frequent visits to Howland forest at Maine, for the maintenance of tilt sensors installed on trees at Howland Forest, Maine (near to Ameri-flux site).

RESEARCH CAMPAIGNS

- Land-Atmosphere Feedback Expermient (LAFE 2017), Atmospheric radiation measurement program, Southern Great Plains site, Oklahoma, USA.
- Surface Atmospheric Boundary Layer Exchange (SABLE) , July - August 2014, Pforzheim, Black forest, Germany:
- HD(CP)2 Observational Prototype Experiment (HOPE) Campaign April- May 2013, Julich, Germany.
- Hohenheim Campaign, October 2013, Stuttgart, Germany.
- Solar Eclipse Campaign, January 2010, National Atmospheric Research Laboratory, India,
- PRWONAM: supporting with operation of radar, data analysis and data assimilation, especially for rocket launch support, NARL, India

PEER-REVIEWED PUBLICATIONS

1. Volker Wulfmeyer, David D. Turner, B. Baker, R. Banta, A. Behrendt, T. Bonin, W.A. Brewer, M. Buban, A. Choukulkar, E. Dumas, R.M. Hardesty, T. Heus, J. Ingwersen, D. Lange, T.R. Lee, S. Metzendorf, **S.K. Muppa**, T. Meyers, R.Newsom, M. Osman, S. Raasch, J. Santanello, C. Senff, F. Späth, T. Wagner, T. Weckwerth. A New Research Approach for Observing and Characterizing Land-Atmosphere Feedback Wulfmeyer et al. 2018, *Bull. Amer. Meteor. Soc.* BAMS-D-17-0009.
2. Rieke Heinze, Anurag Dipankar, Cintia Carbajal Henken, Christopher Moseley, Odran Sourdeval, Silke Trömel, Xinxin Xie, Panos Adamidis, Felix Ament, Holger Baars, Christian Barthlott, Andreas Behrendt, Ulrich Blahak, Sebastian Bley, Slavko Brdar, Matthias Brueck, Susanne Crewell, Hartwig Deneke, Paolo Di Girolamo, Raquel Evaristo, Jürgen Fischer, Christopher Frank, Petra Friederichs, Tobias Göcke, Ksenia Gorges, Luke Hande, Moritz Hanke, Akio Hansen, Hans-Christian Hege, Corinna Hoose, Thomas Jahns, Norbert Kalthoff, Daniel Klocke, Stefan Kneifel, Peter Knippertz, Alexander Kuhn, Thriza van Laar, Andreas Macke, Vera Maurer, Bernhard Mayer, Catrin I. Meyer, **Shravan K. Muppa**, Roeland A. J. Neggers, Emiliano Orlandi, Florian Pantillon, Bernhard Pospichal, Niklas Röber, Leonhard Scheck, Axel Seifert, Patric Seifert, Fabian Senf, Pavan Siligam, Clemens Simmer, Sandra Steinke, Bjorn Stevens, Kathrin Wapler, Michael Weniger, Volker Wulfmeyer, Günther Zängl, Dan Zhang, and Johannes Quaas. Large-eddy simulations over Germany using icon: a comprehensive evaluation. *Quarterly Journal of the Royal Meteorological Society*, 143(702):69–100, 2017.

3. Macke, A., Seifert, P., Baars, H., Barthlott, C., Beekmans, C., Behrendt, A., Bohn, B., Brück, M., Bühl, J., Crewell, S., Damian, T., Deneke, H., Düsing, S., Foth, A., Di Girolamo, P., Hammann, E., Heinze, R., Hirsikko, A., Kalisch, J., Kalthoff, N., Kinne, S., Kohler, M., Löhnert, U., Madhavan, B. L., Maurer, V., **Muppa, S. K.,** Schween, J., Serikov, I., Siebert, H., Simmer, C., Späth, F., Steinke, S., Träumner, K., Trömel, S.,Wehner, B.,Wieser, A., Wulfmeyer, V., and Xie, X.: The HD(CP)2 Observational Prototype Experiment HOPE – an overview, *Atmos. Chem. Phys*., 17 4887–4914, https://doi.org/10.5194/acp-17-4887-2017. 2017.

4. Heinze, R., Moseley, C., Böske, L.N., **Muppa, S.K.,** Maurer, V., Raasch, S., Stevens, B., 2016, Evaluation of large-eddy simulations forced with mesoscale model output for a multi-week period during a measurement campaign. *Atmos. Chem. Phys*., 17, 7083-7109, 2017.

5. **Shravan K Muppa** A. Behrendt, F. Spaeth, V. Wulfmeyer, S. Metzendorf, A.Riede, 2016, Turbulent Humidity Fluctuations in the Convective Boundary Layer: Case Studies usingWater Vapour Differential Absorption Lidar Measurements, *Boundary-Layer Meteorol,* 158:43-66, DOI 10.1007/s10546-015-0078-9.

6. Späth F, Behrendt A, **Muppa SK**, Metzendorf S, Riede A,Wulfmeyer V. 2016. 3-d water vapor field in the atmospheric boundary layer observed with scanning differential absorption lidar. *Atmos. Meas. Tech.* 9: 1701–1720.

7. Volker Wulfmeyer, **Shravan Kumar Muppa**, Andreas Behrendt, Eva Hammann, Florian Späth, Zbigniew Sorbjan, David D. Turner, R. Michael Hardesty, 2015, Determination of Convective Boundary Layer Entrainment Fluxes, Dissipation Rates, and the Molecular Destruction of Variances: Theoretical Description and a Strategy for its Confirmation with a Novel Lidar System Synergy, *J. Atmos. Sci.*2016, 73, 667-692, doi: 10.1175/JAS-D-14-0392.1.

8. Behrendt, A, V. Wulfmeyer, E. Hammann, **Shravan K Muppa**, S Pal, 2015, Profiles of second to fourth-order moments of turbulent temperature fluctuations in the convective boundary layer: First measurements with rotational Raman lidar, *Atmos. Chem. Phys.,* 15, 5485–5500.

9. Webb, VA, M. Rudnicki and **Shravan K Muppa**, Analysis of tree sway and crown collisions for managed Pinus resinosa in southern Maine, 2013*, Forest Ecology and Management,* 302, 193-199.

10. **M. Shravan Kumar,** V. K. Anandan, T. N.Rao and P. Narasimha Reddy, 2012, A climatological study of the Nocturnal Boundary Layer over a tropical Indian Station, *Journal of Applied Meteorology and Climatology*, **51**, 813-826.

11. **M. Shravan Kumar,** V. K. Anandan, K. Amit Kesarkar, SVB Rao and P. Narasimha Reddy, 2012, Study on deep inland penetration of sea breeze over a complex terrain in the tropics, *Atmospheric Research,* **104-105**, 209-216.

12. **M. Shravan Kumar,** V. K. Anandan, Amit P. Kesarkar and P. Narasimha Reddy, 2011, Doppler SODAR observations of the temperature structure parameter during monsoon season over a tropical rural station, Gadanki. *Journal of Earth System Science,* **120**, 1, 65-72.

13. M. Venkat Ratnam, **M. Shravan Kumar**, Ghouse Basha, V.K. Anandan and A.Jayaraman, 2010, Effect of the annular solar eclipse of 15 January 2010 on the lower atmospheric boundary layer over a tropical rural station, *Journal of Atmospheric and Terrestrial Physics,* **72**, 1393-1400.

14. **Shravan Kumar, M,** and V. K. Anandan, 2009, Comparision of the NCEP/NCAR Reanalysis II winds with those observed over a complex terrain in lower atmospheric boundary layer, *Geophysical Research Letters,* **36**, L01805.

15. I. S. Rao, V. K. Anandan, **M. Shravan Kumar,** 2009, Multi-frequency Decoding of a Phase array Doppler Sodar, *Journal of Atmospheric and Oceanic Technology,* **26***,* 759-768.

16. V. K. Anandan, **M. Shravan Kumar**, I. S. Rao, 2008, First Results of Experimental Tests of newly developed NARL Phased Array Doppler SODAR, *Journal of Atmospheric and Oceanic Technology,* 25*,* 1778-1784.

CONFERENCES AND SELECTED PRESENTATIONS

1. International School on Atmospheric Radar (ISAR-NCU) during October 8 - 19. 2007 at the National Central University, Chung-Li, Taiwan.

2. First Atmospheric Observations of a phased array Doppler Sodar system from a tropical Station, Gadanki (13.45^o N, 79.2^o E) at Frontiers of Atmospheric Science, first international work shop Feb 22-24, 2008 at Yogi Vemana Unviersity, Kadapa, India.

3. Turbulence parameters Estimated by Doppler Sodar at a Tropical Station Gadanki (13.5^o N, 79.2^o E) at the National Space Science Symposium (NSSS-08) from February 26- 29, 2008 Radio Astronomy Centre, Ooty, India.

4. Characteristics of winds and turbulence over a tropical rural station surrounded by complex terrain, International Society for Atmospheric Remote Sensing (ISARS-2010), 28-30 June, 2010 Paris, France.

5. Characteristics of Nocturnal Boundary Layer over a complex terrain, International Society for Atmospheric Remote Sensing (ISARS-2010), 28-30 June, 2010 Paris, France.

6. A study on the structure and evolution of nocturnal boundary layer over complex terrain, National Space Science Symposium (NSSS-2012) from February 14- 17, 2012, Sri Venkateswara University, Tirupati, India.

7. Tropical Tropopause Layer Dynamics, February 25 - 26, 2012, Space Physics Laboratory, Vikram Sarabhai Space Center, Thiruvunanthapuram, Kerala, India

8. Overview of HOPE campaign, August 20 2013, M2 workshop Leibniz University Institute for Meteorology und Climatology (IMUK), Hannover, Germany

9. Convective boundary layer studies with combined lidar measurements during HOPE, December 02-03, 2013, HOPE Workshop, TROPOS, Lepzig, Germany.

10. HD(CP)2 Evaluation Meeting: PBL (O4-WP2), October 28, 2014, Maxplanck Institute for Meteorology, Hamburg, Germany.