

Dear Professor

I take this opportunity to express my short project for the HPC School. I have completed my Ph.D. (Dec 2016) in Physics-Atmospheric Sciences from the Department of Physics at SRM University, Chennai, India. I have been guided throughout by Prof. D. Narayana Rao and Dr. M. S. Narayanan to produce the doctoral thesis (May 2012 – Aug 2016) entitled, “Investigations on low-level Indian summer monsoon inversion.” I published two research articles in high impact factor journals (ACP and IEEE) during my Ph. D.. In my Ph. D. thesis, I have basically tried to address the mechanism of formation and maintenance of Monsoon inversion over the Arabian Sea – which had been defying a clear solution for many decades for want of data. In this process, I have been able to document in detail the strength, level, percentage of occurrence, and times of formation and dissipation of Monsoon Inversion by analysing more than a million individual temperature and humidity profiles over the Arabian Sea.

I have extensively used HPC for my work. This is a great opportunity to learn with group for working and experience the use of HPC in my work. While working at National Atmospheric Research Laboratory, I ran the FLEXPART Model for the atmospheric transport over the Arabian Sea and Indian land mass. This motivated me to pursue work for the modeling of the atmosphere using WRF-Chem as well. Presently, I am a Post-Doctoral Fellow in the School of Earth, Ocean, and Climate Sciences, Institute of Technology (IIT) Bhubaneswar, working on Monsoon inversion and its influence on the Indian monsoon system. Several processes which control the rainfall over South Asia region are considered: large scale subsidence, transported humidity air from the ocean, sensible heat flux, monsoon inversion and so on. Among these processes, the role of monsoon inversion is of our interest. I am also working on the effect of dust on monsoon inversion using CALIPSO data and modeled data.

I am struggling with the long run of calculation for the WRF-Chem and Visualization tools as output is having more size than normal WRF. I will learn the visualization technique and apply on the WRF output for the analysis of Dust studies and relation with monsoon. The mixing of Black Carbon with Dust can also be studied as a project there.

To this end, I sincerely hope that you will find my profile well suited to the requirements for the event and give me a chance to be a part of your esteem workshop.

With best regards

(Dr. Sanjeev Dwivedi)