

## Motivation Letter

Dear Representative of ESiWACE Summer School,

I am currently in the first year of my PhD studies at the Department of Meteorology, Stockholm University, Sweden. My work focuses on the diagnosing ocean circulation loops in the Subpolar North Atlantic in terms of their strength, characteristics and their variability and links these to the larger North Atlantic Ocean circulation.

As the first project of my Ph.D. thesis, I have been studying the increased eddy activity in the Iceland Basin. For that, I use reanalysis as well as satellite data. So, I propose a project that makes use of this data (Big Data Analytics) to detect and track the eddies using machine learning techniques to understand the relationship between eddies in the Iceland Basin and low-frequency variability of the North Atlantic Current (NAC) (Post-Processing and Visualization).

I think that this summer school will broaden my understanding of the physics of the ocean by improving my skills in the effective use of HPC environments. In this era of data science, this summer school would be a great platform for me to improve my data processing and statistical skills, and to understand the relation between different dynamical processes in the ocean.

I also think the summer school will provide me a chance to interact with people with expertise in different backgrounds from across the globe. This may help me to understand the present and future large international research programs and the role of ocean in the anthropogenic climate change. I hope my background in oceanography and previous experience in running an observational network will help me to involve in the activities at the summer school.

Thank you for your consideration.

Sincerely,

Arunraj K. Soman