

Title: Evaluation of the Super-collated 2 km Resolution Sea Surface Temperature Dataset Produced by NOAA

Description: The National Oceanic and Atmospheric Organization (NOAA) has recently released a global sea surface temperature (SST) dataset on an approximately 2x2 km grid. This dataset has been produced by combining the data from several satellites (super-collated), which results in a relatively cloud free product making it of significant interest to the oceanographic community and, in particular, to those interested in small scale features of the upper ocean. However, combining data from different satellites and from different orbits of the same satellite has been known to introduce phantom features in the data. We would like to evaluate this dataset based on feature detection using a Machine Learning (ML) algorithm we have developed. We have used this AI/ML algorithm in a similar fashion to evaluate the output of a numerical model of ocean circulation. The student undertaking this project would learn about satellite-derived SST fields, characteristics of SST in the upper ocean, AI/ML applications in oceanography, computing in the cloud and manipulation of large datasets.

The student should have computer programming skills, preferably using Python.

Peter Cornillon and X Prochaska (UCSC) will jointly mentor the student.

Prospective students may contact us.