

Report on Argopy Project.

CMSC 6950

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1 Introduction

Argo is a real-time global ocean observing system.

The Ocean makes up more than 70 percent of the earth's surface, and Argopy provides a global system for monitoring ocean behaviours. Scientists study the behaviour of the Ocean for many reasons, including but not limited to;

1. Ocean behaviour helps scientists understand global weather conditions.
2. The Ocean supports different forms of life that need preserving; drastic changes in parameters like Temperature or Pressure will impact these life forms.
3. Global Warming

Argo consists of about 4000 autonomous floats, measuring parameters like Temperature, Pressure and Salinity. This historical data is available to the public through Argopy. Argopy is an Ocean data analysis python package.

2 Installation

Argopy is a python package and is compatible with python versions 3.6, 3.7 and 3.8. For this project, the following packages are required;

1. Argopy
2. Pandas
3. Matplotlib
4. Numpy

3 Sample Data

Each Argo float is autonomous and drifts the ocean freely. The float cannot control its position but can control its buoyancy. Each float moves up to the ocean's surface and then sinks to about 2000meters every ten days. The figure below is data from 75W to 45W, 20N to 30N, 0db to 10db, January to June 2018 and July to December 2018. The Temperature data is plotted against time in the figures below.

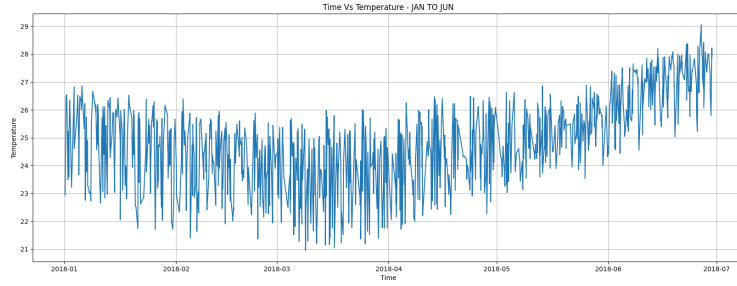


Figure 1: JANUARY TO JUNE 2018.

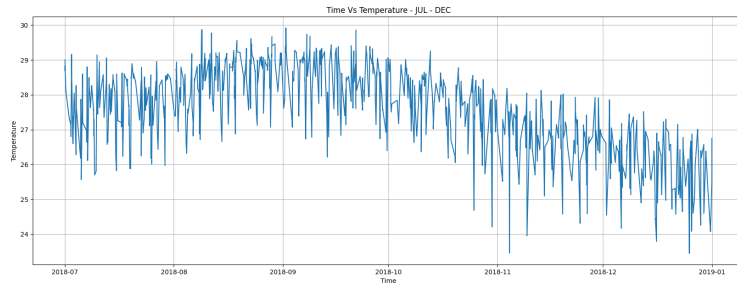


Figure 2: JULY TO DECEMBER 2018

4 Results and Conclusion

The zigzag pattern of the figures above represents the movement of the float every ten days. Temperatures start to drop in August as winter season approaches.

There is a rise in Temperature from March, this represents the end of the winter and the beginning of the spring/summer season

5 BIBLIOGRAPHY

1. Argo data python library - <https://argopy.readthedocs.io/en/latest/index.html>