**NOAA Buoy Data:**

The data considered represents the climatological data gathered from ten Ocean Buoy located in the western Atlantic. The ten Buoy spans the region between southern Bermuda to Puerto Rico. The data includes atmospheric and oceanic information. The buoy considered in this study are owned by NOAA and the National Weather Service. However, there are other buoy operating in the same area and owned by different parties. In actual studies, all the data from all the buoys are considered which make this data accessible to all concerned entities. For this project, we are considering the NOAA buoys as their data are available to the public and the contained information is sufficient to the project objective. The following picture depicts how the buoy looks like



The significance of this data comes from the location of the buoy as they are all located in a very active region in terms of storms and hurricanes.

**Data structure:**

Each buoy data is divided in separate files where each file corresponds to a specific month. The period considered is between January 2016 and September 2016. The features in the data includes:

Wind Direction

Wind Speed

Wind Gust

Wave Height

Dominant Wave Period

Average Period

Mean Wave Direction

Atmospheric Pressure

Pressure Tendency

Air Temperature

Water Temperature

Wind Speed at 10 Meters

Wind Speed at 20 Meters

And the observations are sampled on an hourly basis

**Data Usability:**

Based on the information included in the data, the data is suitable to study climatic changes near the buoy. It can also be used to monitor the evolution of a storm system and it can also be a good basis to evaluate the buoy vandalizme