The historical NWP data can be downloaded using the following MATLAB script

The code stores the file from the s3 in the form of a fileDatastore and copies the file in your current folder

```
fds = fileDatastore( 's3://greenlytics-public/forecasting-competition/releases/Task0/01/2000010
    'ReadFcn', @(filename) copyfile(filename, pwd, 'f'));
read(fds);
```

To further read and access the file from your current folder you can use these NetCDF functions.

For example **`ncinfo`** returns information about the file

```
ncinfo('20000101T00Z.nc')
```

```
ans = struct with fields:
      Filename: 'C:\MYWORK\IEEE-Forecatsing Competition\20000101T00Z.nc'
          Name: '/'
    Dimensions: [1×4 struct]
     Variables: [1×13 struct]
    Attributes: [1×1 struct]
        Groups: []
        Format: 'netcdf4'
```

`ncdisp` display contents of the file in Command Window

```
ncdisp("20000101T00Z.nc")
```

```
Source:
           C:\MYWORK\IEEE-Forecatsing Competition\20000101T00Z.nc
Format:
           netcdf4
Global Attributes:
           resolution = '10.0km'
Dimensions:
           time            = 24    (UNLIMITED)
           ensemble_member = 10
           y               = 169
           x               = 71
Variables:
    Temperature
           Size:       71x169x10x24
           Dimensions: x,y,ensemble_member,time
           Datatype:   single
           Attributes:
                       _FillValue    = NaN
                       long_name     = 'Screen level temperature (T2M)'
                       standard_name = 'air_temperature'
                       units         = 'K'
                       grid_mapping  = 'projection_lambert'
                       coordinates   = 'latitude longitude'
    RelativeHumidity
           Size:       71x169x10x24
           Dimensions: x,y,ensemble_member,time
           Datatype:   single
           Attributes:
                       _FillValue    = NaN
                       long_name     = 'Screen level relative humidity (RH2M)'
                       standard_name = 'relative_humidity'
                       units         = '1'
```

```
                grid_mapping  = 'projection_lambert'
                coordinates   = 'latitude longitude'
Wind_U
       Size:       71x169x10x24
       Dimensions: x,y,ensemble_member,time
       Datatype:   single
       Attributes:
                _FillValue    = NaN
                long_name     = 'Zonal 10 metre wind (U10M)'
                standard_name = 'x_wind'
                units         = 'm/s'
                grid_mapping  = 'projection_lambert'
                coordinates   = 'latitude longitude'
Wind_V
       Size:       71x169x10x24
       Dimensions: x,y,ensemble_member,time
       Datatype:   single
       Attributes:
                _FillValue    = NaN
                long_name     = 'Meridional 10 metre wind (V10M)'
                standard_name = 'y_wind'
                units         = 'm/s'
                grid_mapping  = 'projection_lambert'
                coordinates   = 'latitude longitude'
Pressure
       Size:       71x169x10x24
       Dimensions: x,y,ensemble_member,time
       Datatype:   single
       Attributes:
                _FillValue    = NaN
                grid_mapping  = 'projection_lambert'
                standard_name = 'air_pressure_at_sea_level'
                units         = 'Pa'
                long_name     = 'Mean Sea Level Pressure (MSLP)'
                coordinates   = 'latitude longitude'
CloudCover
       Size:       71x169x10x24
       Dimensions: x,y,ensemble_member,time
       Datatype:   single
       Attributes:
                _FillValue    = NaN
                long_name     = 'Total cloud cover (TCC)'
                standard_name = 'cloud_area_fraction'
                units         = '1'
                grid_mapping  = 'projection_lambert'
                coordinates   = 'latitude longitude'
WindGustSpeed
       Size:       71x169x10x24
       Dimensions: x,y,ensemble_member,time
       Datatype:   single
       Attributes:
                _FillValue    = NaN
                long_name     = 'Wind gust'
                standard_name = 'wind_speed_of_gust'
                units         = 'm/s'
                grid_mapping  = 'projection_lambert'
                coordinates   = 'latitude longitude'
x
       Size:       71x1
       Dimensions: x
       Datatype:   single
       Attributes:
                _FillValue    = NaN
                standard_name = 'projection_x_coordinate'
                long_name     = 'x-coordinate in Cartesian system'
```

```
                    units         = 'm'
y
       Size:       169x1
       Dimensions: y
       Datatype:   single
       Attributes:
                    _FillValue    = NaN
                    standard_name = 'projection_y_coordinate'
                    long_name     = 'y-coordinate in Cartesian system'
                    units         = 'm'
latitude
       Size:       71x169
       Dimensions: x,y
       Datatype:   double
       Attributes:
                    _FillValue    = NaN
                    long_name     = 'latitude'
                    units         = 'degree_north'
                    standard_name = 'latitude'
ensemble_member
       Size:       10x1
       Dimensions: ensemble_member
       Datatype:   int16
       Attributes:
                    long_name           = 'ensemble run number'
                    standard_name       = 'realization'
                    _CoordinateAxisType = 'Ensemble'
longitude
       Size:       71x169
       Dimensions: x,y
       Datatype:   double
       Attributes:
                    _FillValue    = NaN
                    long_name     = 'longitude'
                    units         = 'degree_east'
                    standard_name = 'longitude'
time
       Size:       24x1
       Dimensions: time
       Datatype:   int64
       Attributes:
                    units    = 'hours since 2000-01-01 00:00:00'
                    calendar = 'proleptic_gregorian'
```

Here are some additional resources to help you get started:

- Econometrics toolbox- For time series modelling and analysis
- Time Series Regression : Forecasting
- Import NetCDF Files and OPeNDAP Data
- MATLAB Onramp
- Deep Learning Onramp
- Introduction to Machine Learning
- 8 MATLAB Cheat Sheets for Data Science