

# L09-18-11-7-P3-querying-map-image

November 12, 2018

```
In [2]: import xarray as xr
```

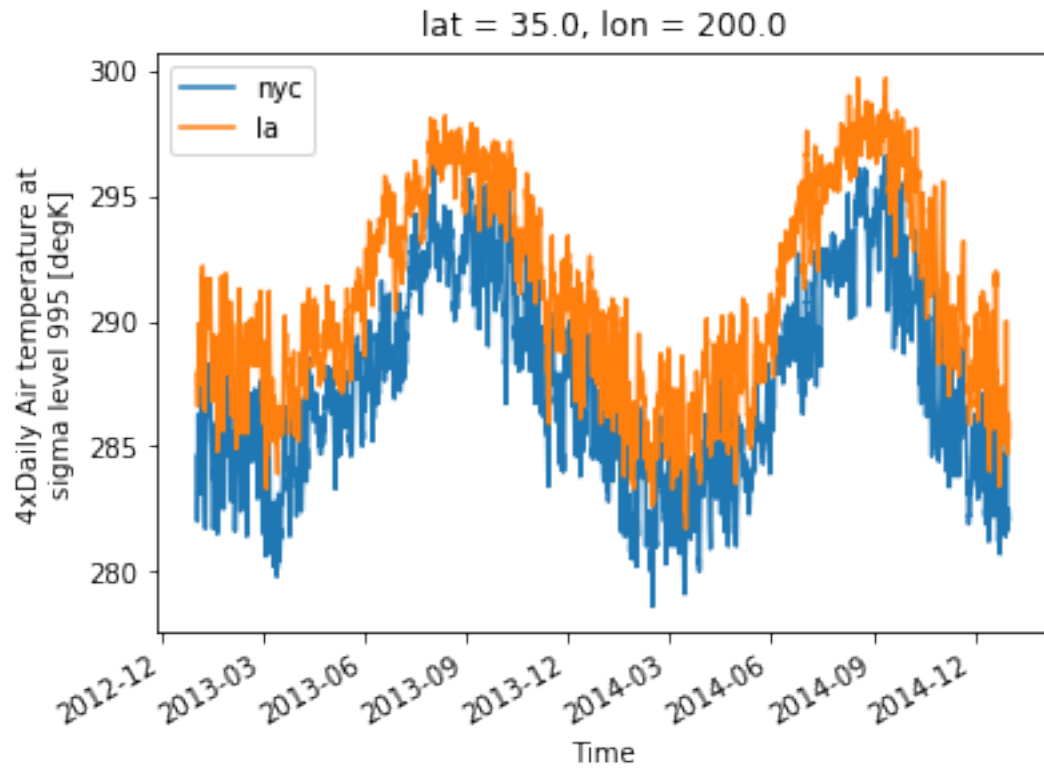
```
In [3]: ds = xr.tutorial.load_dataset('air_temperature')
ds
```

```
Out[3]: <xarray.Dataset>
Dimensions:  (lat: 25, lon: 53, time: 2920)
Coordinates:
  * lat      (lat) float32 75.0 72.5 70.0 67.5 65.0 ... 25.0 22.5 20.0 17.5 15.0
  * lon      (lon) float32 200.0 202.5 205.0 207.5 ... 322.5 325.0 327.5 330.0
  * time     (time) datetime64[ns] 2013-01-01 ... 2014-12-31T18:00:00
Data variables:
  air        (time, lat, lon) float32 241.2 242.5 243.5 ... 296.49 296.19 295.69
Attributes:
  Conventions: COARDS
  title:       4x daily NMC reanalysis (1948)
  description: Data is from NMC initialized reanalysis\n(4x/day).  These a...
  platform:    Model
  references:   http://www.esrl.noaa.gov/psd/data/gridded/data.ncep.reanaly...
```

```
In [19]: nyc = ds.sel(lat=40.712, lon = 74.0060, method='nearest')
la = ds.sel(lat = 34.0522, lon =118.2437, method='nearest' )
```

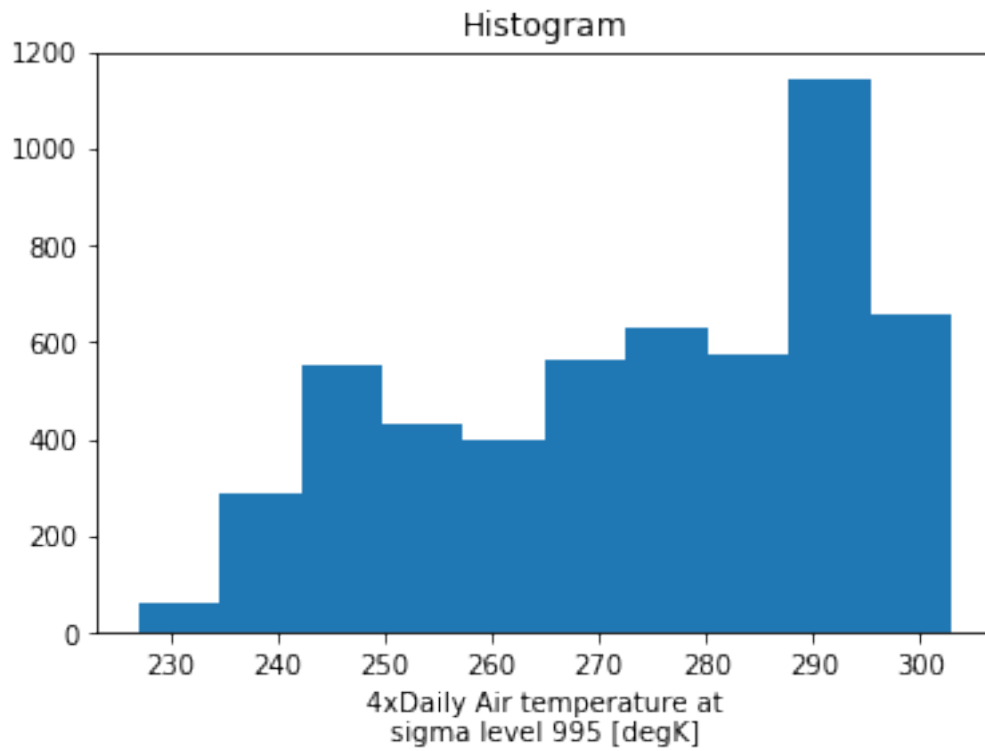
```
In [20]: import matplotlib.pyplot as plt
%matplotlib inline

_ = nyc['air'].plot(label='nyc')
_ = la['air'].plot(label='la')
_ = plt.legend()
```



```
In [22]: winter = ds['air'].sel(time='2013-01-01')
         winter.plot()
```

```
Out[22]: (array([ 62., 287., 553., 434., 399., 562., 629., 572., 1142.,
                  660.]),
          array([227.   , 234.59, 242.18, 249.77, 257.36, 264.95, 272.54, 280.13,
                  287.72, 295.31, 302.9 ], dtype=float32),
          <a list of 10 Patch objects>)
```



```
In [34]: climnyc = nyc.groupby('time.month').mean('time')
        climla = la.groupby('time.month').mean('time')
```

```
In [40]: _ = climnyc['air'].plot(label='nyc')
        _ = climla['air'].plot(label='la')
        _ = plt.legend()
```

