

- How to read the Format

The data is recorded in the NetCDF4 format, which is a widely-used self-describing format developed at Unidata (<http://www.unidata.ucar.edu/software/netcdf/software.html>). A number of data viewers and manipulation tools are available for the NetCDF format. Please see the tool list (<http://www.unidata.ucar.edu/software/netcdf/software.html>).

If you use Python3, you can read the NetCDF data with such descriptions as bellow;

```
from os import chdir
import netCDF4 as ncf

chdir("Write an absolute path of the directory where you have downloaded the data")

nc0 = ncf.Dataset("xelectron20000412.nc", "r", format='NETCDF4')

alt = nc0.variables["alt"][:] # altitude [km]
time = nc0.variables["time"][:] # time [Local Time]
density = nc0.variables["density"][:, :, :] # electron/ion density [m^-3]

alt_dim = len(alt)
time_dim = len(time)

nc0.close()
```

```
from os import chdir
import netCDF4 as ncf

chdir("Write an absolute path of the directory where you have downloaded the data")

nc0 = ncf.Dataset("nwind20000412.nc", "r")
lon = nc0.variables["lon"][:] [deg.]
lat = nc0.variables["lat"][:] [deg.]
alt = nc0.variables["alt"][:] [km]
time = nc0.variables["time"][:] [Universal Time]

uu = nc0.variables["zonal"][:, :, :] # eastward positive [m/s]
vv = nc0.variables["meridional"][:, :, :] # northward positive [m/s]
ww = nc0.variables["vertical"][:, :, :] # upward positive [m/s]

nc0.close()
```