**Brief Introduction:**

Moderate Resolution Imaging Spectroradiometer (MODIS) is one of the NASA’s instruments aboard the Terra and Aqua satellites. Terra's orbit around the Earth is timed so that it passes from north to south across the equator in the morning, while Aqua passes south to north over the equator in the afternoon. Terra MODIS and Aqua MODIS are viewing the entire Earth's surface every 1 to 2 days, acquiring data in 36 spectral bands, or groups of wavelengths. Some of the spectral bands are used to retrieve atmospheric parameters. Integrated data at 3 km resolution (originally from 250m resolution images) are listed in the files near/over ARM SGP sites.

**Exercise:**

1. Can you open any of the hdf file(s) for different passes/times.
2. Get familiar to the fields from these data files
3. Try to plot/map some of the important fields from a given day/time.
4. Try to see if there is a relation in Aerosol and/or Clouds fields
5. Look into the reflectance data, see if the MODIS reflectance are different then the Altum observations. If yes, why?
6. Like Altum, using MODIS data, estimate the presence of vegetation using Normalized Difference Vegetation Index [NDVI = (NIR - R) / (NIR + R)].

**Image and/or data files provided:**

MYD04\_3K.A\*.hdf

UW\_course\_all\_data.dat

Data columns in [UW\_course\_all\_data.dat]

year\_fr, year, month, day, Lat, lon, aod, aodr, CF, Ref1-Ref7)

Ref1-Ref7 = Mean reflectance of pixels used for land retrieval at 0.47, 0.55, 0.65, 0.86, 1.24, 1.63, 2.11 microns