DLR

ATCOR Course

Atmospheric Correction Over Land

Rudolf.Richter@dlr.de

German Remote Sensing Data Center

Objectives :

- learn basics of remote sensing
- obtain knowledge on retrieval of atmospheric parameters
- understand critical parameters for atmospheric correction
- get familiar with the ATCOR code

Contents of Course

1. Basics of remote sensing
    - basic physical concepts
    - radiometric definitions
    - reflectance behavior
    - spectral signatures
    - field spectro-radiometric measurements
2. Atmospheric correction
    - absorption and scattering
    - radiative transfer codes
    - radiance components (path, surface reflected, adjacency)
    - radiance components in mountainous terrain
    - thermal radiation components
    - aerosol retrieval (optical thickness, visibility)
    - water vapor retrieval
    - haze, cirrus removal
    - de-shadowing

Contents of Course (continued)

3. Working with ATCOR using demo scenes (MS/HS)

   Radiometric calibration file

   Aerosol type, visibility estimator

   SPECTRA module, reference spectra

   Image processing options (haze removal, water vapor)

   Inflight radiometric calibration

   Spectral calibration (hyperspectral)

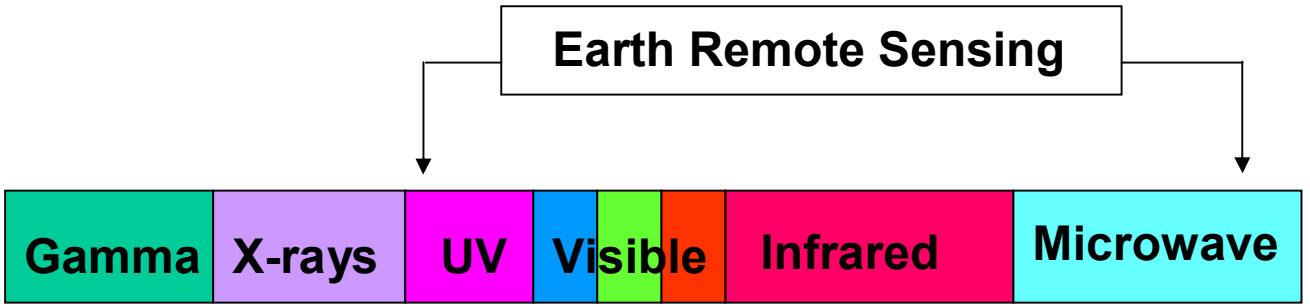
   Mountainous terrain: slope, aspect, skyview

   ATCOR preference parameters

   Input / Output files

   Automatic spectral classification of surface reflectance data

Remote Sensing:
Acquire and Store Information from a Distance (aircraft, satellite)



Optical Spectrum

λ = 100 nm - 1 mm

Units commonly employed in the optical spectrum

- Wavelength λ : nm or µm
- Wavenumber ν : cm^{-1}

$$\lambda(\mu m) = \frac{10^4}{\nu(cm^{-1})}$$