

Biophysical characteristics

$$APAR = PAR_{inc} - PAR_{out} - PAR_{transm} + PAR_{soil}$$

$$fAPAR = APAR / PAR_{inc}$$

$$fAPAR_{green} = fAPAR * (\text{green LAI} / \text{total LAI})$$

Vegetation Indices

$$NDVI = (\rho_{NIR} - \rho_{red}) / (\rho_{NIR} + \rho_{red})$$

$$NDVI_{RE} = (\rho_{NIR} - \rho_{rededge}) / (\rho_{NIR} + \rho_{rededge})$$

$$NDVI_{green} = (\rho_{NIR} - \rho_{green}) / (\rho_{NIR} + \rho_{green})$$

$$WDRVI = [(\alpha + 1)NDVI + (\alpha - 1) / (\alpha - 1)NDVI + (\alpha + 1)]$$

$$VARI = (\rho_{green} - \rho_{red}) / (\rho_{green} + \rho_{red})$$

$$EVI2 = 2.5 * (\rho_{NIR} - \rho_{red}) / (1 + \rho_{NIR} + 2.4 * \rho_{red})$$

$$CI_{green} = \rho_{NIR} / \rho_{green} - 1$$

$$CI_{red\ edge} = \rho_{NIR} / \rho_{red\ edge} - 1$$

Bands used

Sensor Modis Platform (Terra and Aqua)
 green (545–565 nm)
 NIR (840–870 nm)

Sensor MERIS Platform Envisat EOS
 red edge (703.75–713.75 nm)
 NIR (750–757.5 nm)