MODIS Terra Daily EVI write up

**Data set Overview**

The Moderate Resolution Imaging Spectroradiometer (MODIS) Terra Daily Enhanced Vegetation Index (EVI) dataset is one of two vegetation indices produced from reflectance in the red, near-infared, and blue wavebands which is retrieved from the MODIS sensor aboard the Terra Satellite (Didan, Maccherone, & Frazier). To improve the accuracy of the dataset, the surface spectral reflectance observations used to produce it are corrected for atmospheric conditions like gasses, aerosols, and Rayleigh scattering (Vermote, 2015).

**EVI**

Compared to the other index derived from MODIS, the normalized difference vegetation index (NDVI), EVI minimizes canopy-soil variations and improves sensitivity over high biomass regions (Didan et al.). While NDVI is sensitive to chlorophyll, EVI is more responsive to structural variation in the canopy which is useful in vegetation monitoring because 70% of Earth’s terrestrial surface is made up of open canopies whose background signals can distort reflectance observations (Huete et al., 2002). EVI was developed in order to optimize the vegetation signal through reducing atmospheric influences and decoupling the canopy background signal. This leads to improved sensitivity in high biomass areas and improved vegetation monitoring (Huete et al., 2002).

**References**

Didan, K., Maccherone, B., & Frazier, S. MODIS Vegetation Index Products (NDVI and EVI): Overview. Retrieved from <https://modis.gsfc.nasa.gov/data/dataprod/mod13.php>

Huete, A., Didan, K., Miura, T., Rodriguez, E. P., Gao, X., & Ferreira, L. G. (2002). Overview of the radiometric and biophysical performance of the MODIS vegetation indices. *Remote Sensing of Environment, 83*(1), 195-213. doi:<https://doi.org/10.1016/S0034-4257(02)00096-2>

Vermote, E., Wolfe, R. (2015). MOD09GA MODIS/Terra Surface Reflectance Daily L2G Global 1kmand 500m SIN Grid V006 [Data set]. Retrieved 2022-07-18, from NASA EOSDIS Land Processes DAAC <https://doi.org/10.5067/MODIS/MOD09GA.006>