

List of Vegetation Spectral Indices

Vegetation Indices	
DVI, Difference Vegetation Index (Tucker, 1979)	NIR - red
GDVI, Green Difference Vegetation Index (Sripada et al., 2006)	NIR – green
GNDVI, Green Normalized Difference Vegetation Index (Buschmann and Nagel, 1993)	$(\text{NIR} - \text{green}) / (\text{NIR} + \text{green})$
NDVI, Normalized Difference Vegetation Index (Rouse, 1973)	$(\text{NIR} - \text{red}) / (\text{NIR} + \text{red})$
NG, Normalized Green (Sripada et al., 2006)	$\text{Green} / (\text{NIR} + \text{red} + \text{green})$
NR, Normalized Red (Sripada et al., 2006)	$\text{Red} / (\text{NIR} + \text{red} + \text{green})$
NNIR, Normalized Near Infrared (Sripada et al., 2006)	$\text{NIR} / (\text{NIR} + \text{red} + \text{green})$
RVI, Ratio Vegetation Index (also known as the Simple Ratio) (Birth and McVey, 1968)	NIR / red
GRVI, Green Ratio Vegetation Index (Sripada et al., 2006)	$\text{NIR} / \text{green}$
Atmospherically Resilient Vegetation Indices	
GARI, Green Atmospherically Resilient Index (Gitelson et al., 2002)	$\text{NIR} - [\text{green} - (\text{blue} - \text{red})] / \text{NIR} [\text{green} - (\text{blue} - \text{red})]$
GEMI, Global Environmental Monitoring Index (Pinty and Verstraete, 1992)	$\hat{\eta}^*(1 - 0.25*\hat{\eta}) - [(\text{red} - 0.125) / (1 - \text{red})]$, where $\hat{\eta} = [2*(\text{NIR}^2 - \text{red}^2) + 1.5*\text{NIR} + 0.5*\text{red}] / (\text{NIR} + \text{red} + 0.5)$
VIgreen (VIg), Vegetation Index Green (Gitelson et al., 2002)	$(\text{green} - \text{red}) / (\text{green} + \text{red})$
VARIgreen (VARIg), Vegetation Index Green (Gitelson et al., 2002)	$(\text{green} - \text{red}) / (\text{green} + \text{red} - \text{blue})$
Soil-Adjusted Vegetation Indices	
EVI, Enhance Vegetation Index (Liu and Huete, 1995)	$G * [(\text{NIR} - \text{red}) / (\text{NIR} + \text{C1}*\text{red} - \text{C2}*\text{blue} + \text{L})]$, where $G = 2.5$, $\text{C1} = 6$, $\text{C2} = 7.5$, $\text{L} = 1$
MSAVI2, Modified Soil Adjusted Vegetation Spectral Index (Equation 19 in Qi et al. 1994)	$[2*\text{NIR} + 1 - \sqrt{(2*\text{NIR}+1)^2 - 8*(\text{NIR} - \text{red})}] / 2$

OSAVI, Optimized Soil Adjusted Vegetation Index (Rondeaux et al., 1996)	$[(\text{NIR} - \text{red}) / (\text{NIR} + \text{red} + L)] * (1 + L)$ where L is a correction factor that equals 0.16 (the same equation as SAVI but with a correction factor of 0.16 instead of 0.5)
SAVI, Soil Adjusted Vegetation Index (Huete, 1988)	$[(\text{NIR} - \text{red}) / (\text{NIR} + \text{red} + L)] * (1 + L)$, where L = 0.5 where L is a correction factor which ranges from 0 for very high vegetation cover to 1 for very low vegetation cover. The most typically used value is 0.5 which is for intermediate vegetation cover and that is the value used here
GSAVI, Green Soil Adjusted Vegetation Index (Sripada et al., 2006)	$[(\text{NIR} - \text{green}) / (\text{NIR} + \text{green} + L)] * (1 + L)$, where L = 0.5
TSAVI, Transformed Soil Adjusted Vegetation Index (Baret et al., 1989)	$[a (\text{NIR} - a * \text{red} - b)] / [a * \text{NIR} + \text{red} - (a * b) + X(1 + a^2)]$ where a = slope of the soil line, b = intercept of the soil line, X = 0.8 (adjustment factor with this value is in original paper); the median soil line value reported in (Baret and Guyot, 1991) are a= 1.2 and b = 0.04 and were used here

References

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