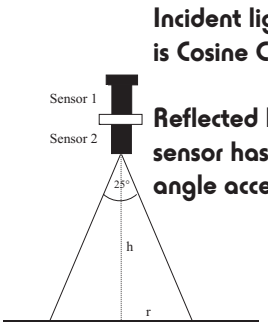
LIGHT

Sensors for NDVI

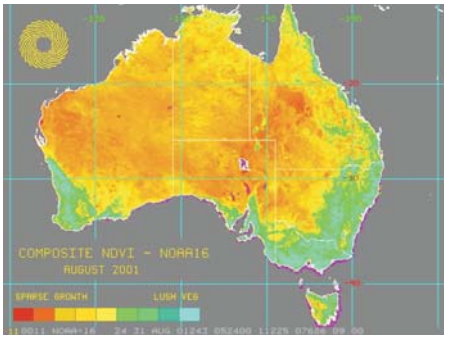
- 1, 2 and 4 channel sensors
- Incident and reflected light & radiation measurements
- Ground truth readings for Earth observation satellites
- Ideal addition to Eddy Covariance systems
- Standard and custom wavelengths available

Pair of NDVI light sensors



Incident light sensor is Cosine Corrected

Reflected light sensor has narrow angle acceptance



NDVI is defined as the Normalised Difference Vegetation Index. NDVI is calculated from observations made by earth orbiting meteorological satellites such as LANDSAT, SPOT, NOAA AVHRR, MODIS etc.

The satellites record spectral reflectivity of solar radiation at specific wavelengths, allowing the monitoring of the density and vigour of green vegetation growth.

Errors in the satellite readings are caused by several atmospheric conditions such as small area clouds, scattering by dust and aerosols, large solar zenith angles etc. Skye sensors are used to make 'ground truth' observations to make corrections to the satellite recorded data.

Long term NDVI data can be collected using these sensors attached to most dataloggers, including Skye's DataHog, or spot readings can be taken using the SpectroSense2 hand held display meter.

The Skye 2 and 4 channel sensors have a removable cosine correcting diffuser. With the diffuser in place the sensor is fully cosine corrected for incident light measurements. When the diffuser is removed the sensor has a narrow light acceptance angle and is thus suitable for measuring reflected light from crops, soil, forest canopies, etc.

Simultaneous measurements of both incident and reflected radiation are required for the NDVI calculation.

Sensor channels can be individually specified with wide or narrow wavebands calibrated between 280 and 1100nm. Choose a waveband to match the earth observing satellite bands, for example Red and Near Infra--red, or custom wavelengths according to your own study interests.

APPLICATION

Dr Caroline Nichol , University of Edinburgh has a pair of Skye NDVI sensors attached to a Skye DataHog logger installed on an eddy covariance tower in Finland.

Thanks to Dr Nichol for her kind permission to reproduce these photographs

DataHog logger collecting NDVI data

NDVI sensors on eddy covariance tower over forest canopy

Pair of NDVI incident & reflected light sensors

NOTES

Normalised Differential Vegetation Index

$$NDVI = \frac{(Chan\ 2 - Chan\ 1)}{(Chan\ 2 + Chan\ 1)}$$

ORDERING INFORMATION

Sensor

SKR 1800	2 Channel sensor (Please specify centre wavelength and bandwidth for each channel)
SKR 1850	4 Channel sensor (Please specify centre wavelength and bandwidth for each channel)
SKR 1850A	4 channel sensor with amplifier (Please specify centre wavelength and bandwidth for each channel)

Accessories

SKM 222	Sensor levelling /mounting unit

Dataloggers & Meters

SDL 5000 series	DataHog datalogger
SKL 904	SpectroSense2
SKL 908	SpectroSense2+

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