



## **PRESS RELEASE**

### **Using vegetation indices based on broadband and narrowband greenness with the PSR+ field spectroradiometer**

*Lawrence, MA – February 3, 2017* – The PSR+ is a rugged and reliable field portable spectroradiometer that can be along with vegetation indices to identify and characterize plant samples without harming the samples.

Combinations of measured reflectance properties at two or more wavelengths using a PSR+ field spectroradiometer from Spectral Evolution can provide information on specific vegetation characteristics. These characteristics form the basis for creating vegetation indices. A number of vegetation indices are based on the properties of broadband greenness and narrowband greenness.

Broadband greenness measures the health of vegetation by comparing strong reflective properties in NIR wavelengths (700-1300nm) with the strong absorption features in the red wavelengths. These vegetation indices include NDVI (Normalized Difference Vegetation Index), EVI (Enhanced Vegetation Index), and ARVI (Atmospherically Resistant Vegetation Index). NDVI normalizes green leaf scattering in the NIR and chlorophyll absorption in the red. EVI uses information in the blue wavelength to improve NDVI in areas of dense canopy by correcting background noise and atmospheric influence. ARVI is resistant to atmospheric influences.

Narrowband greenness measures the overall amount and quality of photosynthetic material in vegetation. The vegetation indices in this group use reflectance bands in the red and NIR to sample the red edge portion of the spectra. The red edge is the steep slope between 690nm and 740nm caused by the transition from chlorophyll absorption to NIR leaf scattering (increased reflectance). Indices include GRVI (Green Ratio Vegetation Index), Red/Green Ratio, Green NDVI (Green Normalized Difference Vegetation Index), and NDVI705 (Red Edge Normalized Vegetation Index). These indices incorporate red edge data with a leaf specular correction. DARWin SP Data Acquisition software provides the interface for the PSR+ and includes 19 vegetation indices for use in vegetation research that are accessed from a pull-down menu.

The PSR+ has no moving optical parts for excellent field ruggedness and stability. Used with the GETAC microcomputer, it allows a researcher to take digital pictures, record voice notes, include GPS coordinates, and see the scans on its sunlight readable display. All data is saved with the spectra in an ASCII file for use with third party software.

For more information:

[http://www.spectralevolution.com/applications\\_greenness\\_measurements.html](http://www.spectralevolution.com/applications_greenness_measurements.html)

#### **About SPECTRAL EVOLUTION**

Established in 2004, SPECTRAL EVOLUTION is a leading manufacturer of laboratory and handheld portable spectrometers, spectroradiometers and spectrophotometers. SPECTRAL EVOLUTION spectrometers are used worldwide for many mission-critical lab and field applications in mining, remote sensing, vegetative studies, ground truthing, environmental and climate studies, developing satellite calibrations, and more, due to their reliable, robust, rugged design and user-friendly one-touch features.

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Press contact

Mo Kashdan

Marketing & Sales

978-687-1833

[Maurice.kashdan@spectralevolution.com](mailto:Maurice.kashdan@spectralevolution.com)

SPECTRAL EVOLUTION

1 Canal Street, Unit B1

Lawrence, MA 01840 USA

[www.spectralevolution.com](http://www.spectralevolution.com)

