



Normalization of the reflected radiation as method of environmental optimal conditions in field radiometry.

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Field spectrometry is the quantitative measurement of radiance, irradiance, transmission or reflectance in the field. The field reflectance is measured under natural illumination conditions therefore the spectral characteristics will depend, between others, of the environmental conditions of measure.

This study proposes a normalization method of the solar reflected radiation for electromagnetic spectra treatment from the covers of the terrestrial surface. This process consists of reducing and compensating resultant variations of lighting sun of the different dates of spectral acquisition. The employment of this radiometric correction model allows to correct and to minimize the effect of the environmental adverse conditions for the field spectrometry application, such as the negative factors of the coverage of clouds that influence the albedo.

The aims of the work were: i) to apply the normalization model in cover of soil of the Spanish south-east and ii) to evaluate and to compare the points of inflexion between electromagnetic absolute and normalized spectra from a derivative analysis.

Spectral data were taken under different conditions of natural illumination during the period between October and December of 2008 in different soil associations from the Baix Vinalopó (south-east of Spain). A normalization model was applied and there were evaluated the points of inflexion from electromagnetic absolute and normalized spectra after application of the first and second derivative. A statistician based on the distribution of t of Student with a confidence interval of 95 % was used to evaluate the inflexion points from its similar characteristics in the variable of control.

The results revealed an analogy between the inflexion points without some alteration from the spectral features of the covers after model application and from the derivative analysis.

The normalization of the reflected radiation allows the field spectrometry application under not controllable environmental conditions, intensity of solar radiation, without it determines the moment of use of the radiometric technic allowing to support the spectral features.

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