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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 30115-2013

**Specifications for vegetation index production from satellite
remote sensing imagery**

卫星遥感影像植被指数产品规范

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Table of Contents

1 Scope	1
2 Normative references	1
4 Abbreviations and symbols 3	5
6 Vegetation Index Level	3
4 Synthesis of	7
15 Annex E (informative) common BRDF model	18

Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. This standard by the National Remote Sensing Technology Standardization Technical Committee (SAC/TC327) and focal points. This standard was drafted. Wuhan University, Institute of Remote Sensing and Digital Earth Chinese Academy of Sciences, the National Satellite Meteorological Center. The main drafters of this standard. Wu Zhaocong, Jiangwan Shou, Zhong Bo, Chen Xing, Zhang Ye Ping, Yang Jian, Zhang Xiang, Yan source.

Green leaf cell structure strong in the infrared reflection characteristics in the visible red chlorophyll has strong absorption bands Characteristics, linear data by a red band satellite remote sensing and infrared reflectance data or non-linear combination of a series of indices can be calculated, these Index contains a lot of vegetation information, they are collectively referred to as the vegetation index (dimensionless). Vegetation Index Leaf Area Index is green vegetation (LAI), vegetation coverage density, content of chlorophyll, the green biomass as well as a comprehensive reflection can absorb photosynthetically active radiation (APAR) is a reflection of The relative abundance of green vegetation and an active and effective measure. Most Landsat equipped with remote sensors configures the red and infrared wavelengths, from these data and satellite images can be large and sustained eligible Vegetation index obtained surface. Under certain conditions, the acquired remote sensing vegetation index is considered to reflect visible light, infrared vegetation and soil back The main difference between the index view can be used to qualitatively or quantitatively evaluate the viability and growth of vegetation cover. Qualitatively, vegetation index is often used To enhance the ability of classification and recognition. Quantitative aspects, since the vegetation index with a variety of vegetation parameter has a good correlation can be used to invert a Series vegetation biophysical parameters such as leaf area index, chlorophyll content, biomass, photosynthetic active radiation absorption coefficient, etc., and then used to divide Analysis of vegetation growth process, such as net primary productivity and evapotranspiration (transpiration) and the like. In practice, different

researchers may use when calculating the vegetation index different processing methods and processes, including the use of different Satellite reflectance data, different radiometric correction, vegetation index, vegetation index synthetic evaluation methods and product quality. This standard To solve these problems, the calculation by the optical satellite remote sensing data in terrestrial vegetation index product level, production and synthesis, product quality Evaluation regulate to ensure that vegetation index in remote sensing research and application consistency. Satellite Images Vegetation Index Product Specifications

1 Scope

China's national specification for producing vegetation index products from optical satellite remote sensing imagery. It defines the levels into which such products are divided, the production process that leads to each level, and the methods by which the result is assessed for quality, and it applies to the production, quality assessment and exchange of land vegetation index products derived from optical satellite images. A vegetation index is a number computed from two or more spectral bands - most often the red and the near infrared - that exploits a single fact about green leaves: chlorophyll absorbs strongly in the red while leaf cell structure reflects strongly in the near infrared, so the contrast between those two bands is large over vegetation and small over almost everything else. The resulting index correlates well with leaf area index, canopy cover, chlorophyll content, green biomass and absorbed photosynthetically active radiation, which is why it is used both qualitatively, to improve land cover classification, and quantitatively, to invert biophysical parameters and to drive models of net primary productivity and evapotranspiration. The problem the standard addresses is that the same index computed by two producers from the same satellite is routinely not the same number. Different reflectance products, different radiometric and atmospheric corrections, different treatment of the bidirectional reflectance distribution function, different cloud and snow masking and different compositing rules all change the result, and a time series assembled from inconsistently produced values cannot be interpreted as a change in vegetation. The standard fixes the product levels, the processing chain, the compositing, the metadata and the quality flags so that a vegetation index product is reproducible and comparable. Issued on 17 December 2013 and in force since 15 July 2014.

This standard specifies the level of optical satellite remote sensing terrestrial vegetation index product division, production processes and quality evaluation methods. This standard applies to optical satellite remote sensing images terrestrial vegetation index products, quality assessment and data exchange process.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references,

the latest edition (including any amendments) applies to this document.

GB/T 13989 national basic scale topographic maps and numbering

GB/T 14950-2009 Photogrammetry and Remote Sensing term

GB/T 15968 remote sensing image plan production specification

3 Terms and Definitions

GB/T 14950-2009 define the following terms and definitions apply to this document.

3.1 Radiant Flux radiantflux In unit time through a certain area of the radiant energy.

3.2 Radiance radiance Unit projected area, the radiation flux per unit solid angle on.

3.3 The apparent radiance apparentradiance Remote Sensor entrance pupil observed radiance.

3.4 Digital gray value digitalnumber Or radiant energy reflected by the remote sensor to quantify each band acquired from the gradation. NOTE. dimensionless, ranging from remote sensors with different levels and different quantization.

3.5 Radiometric Correction radiometriccorrection On the system due to external factors, data acquisition and transmission system generated random radiation distortions or aberrations correction. [GB/T 14950-2009, the definition 5.195]

3.6 Apparent reflectance apparentreflectance No apparent radiance and atmospheric level scene absolutely white body should be given under the assumption that the remote sensor entrance pupil ratio between the radiance.