

10. Calculation Of Vegetation Index

10.1 Calculation Of VI And SVI

As a method of capturing vegetation activities clearly, calculation of vegetation index is thought of. Here, a calculation method of vegetation index is described.

(1) Level 2 algorithm

Vegetation index VI is stored in level 2. VI is calculated as follows using visible area (red area) and near infrared data.

$$VI = (X2 - X1) / (X2 + X1) \quad (10.1-1)$$

Where

$$X2 = A * B7 + (1-A) * B8 \quad (10.1-2)$$

X1 : Level 1B brightness value of band 6

X2 : Level 1B brightness value of band n

A : 0.5 before launch

(2) Level 3 algorithm

Level 3Map and 3Binned Map is stored with addition of scale of distance as SVI (Scaled VI). Scaled VI is calculated as follows.

$$SVI = a * VI + B \quad (10.1-3)$$

Here,

VI : Vegetation Index

a : -350.0 before launch

b : 222.5 before launch

10.2 Calculation Of Level 2QF

For vegetation index, QF of the following items are calculated for each pixel.

- Scan angle
- Out of scan
- Land / Ocean
- Gain
- Transient response
- Saturation

This kind of quality information is calculated by the following methods.

(1) Scan angle

When scan angle calculated simply from sample number is more than 30 [deg.] , a flag is place.

(2) Out of scan

When band 6,7 and 8 data is not all there, a flag is placed and masking is performed.

(3) Land / Ocean

DCW is used for determination of land / ocean and a flag is placed when it is ocean.

(4) Gain

If there is one sea gain found among band 6, 7 and 8, a flag is placed.

(5) Transient response

(6) Saturation

If there is one is saturated among band 6, 7 and 8, a flag is placed.