

# **Agricultural Monitoring Using ALOS Data**

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ALOS satellite launched at December 2006, and the earth observation satellite has two optical sensors and one SAR sensor. Those sensors are observing at high resolution at terrestrial area, and are expected to provide us useful data for agriculture management. For development of agricultural monitoring system, we study the abilities of ALOS data for agriculture. For the reason we test the data for application of agriculture.

Japan is long country for north and south, and climatic conditions are very different, and we interpret the status of paddy fields various areas at 4th May 2006 in Japan using ANIR-2 data. Image acquisition date is 4 May 2006 and it is the starting time of rice transplanting in the paddy fields. In Japan, Workers have holidays from 29 April to 5 May as the name of Golden week. Almost farmers have another jobs as employee of company and local government. The AVINIR2 data are imported in ERDAS/Imagine as the geo-coded data and made large mosaic image of Hokkaido, Tohoku, and Kanto column and Kyushu column. We can easily understanding rice transplanting situations all over Japan using AVINIR2 data. Hokkaido area is not rice transplanting for cold weather, and some areas of Kyushu are not by two cropping system. Other area is just rice transplanting period in Japan.

In the East and Southeast Asian countries include Japan, growth of rice crop is at rainy season, and it is difficult to observation of the growth using optical sensor by clouds. Synthetic Aperture Radar (SAR) has the ability of pass through clouds and observing every weather condition and we are testing PALSAR ability of agriculture monitoring. Image acquisition dates are April to September in 2006. The PALSAR data of 28 April are multi-scenes from Akita Prefecture to Fukushima Prefecture. The others are one or two scenes at Shonai Area in Ymagata Prefecture. Acquisition dates of used data are as follows; 28 April, 6 June, 22 July, 28 September in 2006.

Over lay image of PALSAR and topographical map at mountain area, and there are some errors by fore shorting. That of plain area, and two images is very good fitting. There are dark fields and not dark fields, and dark fields are filled with water and not dark fields are no water. At 28 April, only a few fields filled with water, and at 6 June almost fields filled with water. At 22 July and 28 September also almost fields filled with water. At Shonai area, paddy filed managements are well known by PALSAR data