

October 15, 2018

[Press Release]

In order to support analysis and monitoring using Japanese Earth Observation satellite

PASCO starts offering package purchase of ALOS-2 satellite data sets, “InSAR Package”

PASCO CORPORATION (Headquarters: Tokyo, Japan; President and CEO, Dr. Hideki Shimamura, hereinafter referred to as PASCO) distributes data and images acquired by ALOS – 2 (The Advanced Land Observing Satellite 2: Daichi-2) satellite which is owned by the Japan Aerospace Exploration Agency (hereinafter referred to as JAXA), according to the agreement with JAXA with its distributors.

As one of the new sales items, PASCO will start selling a new service "InSAR Package" (hereafter the Service).

In the recent years, natural disasters have occurred more frequently around the world, and researches for disaster prevention have been actively implemented. In particular, research using earth observation satellites is gaining attention as an effective method because a wide range of information can be obtained on a regular basis. Among them, the Synthetic Aperture Radar (SAR) satellite represented by ALOS-2 is effective for periodic observation because images are suitable day and night regardless of atmospheric weather conditions. Interferometric SAR analysis (InSAR analysis) is suitable for land subsidence and deformation associated with a natural disaster observation, and its needs are increasing year by year.

In order to respond to such needs, this service will be provided as a package fee basis, so that the users, who conduct InSAR analysis multiple times in a certain period and/or long-term monitoring periods, can purchase the data sets as a “Package Purchase”.

■ About InSAR analysis

It is possible to measure the displacement of the ground surface (how much the ground moved) from the difference of observation data (reflection information) over multi temporal, more than two times, observation periods (Fig. 1). Such analysis method is called InSAR analysis. This analysis method is particularly used in the fields such as ground change monitoring and estimation of urban changes. Fig. 2 shows the ground change estimated by InSAR analysis using the observation data before and after the 2016 Kumamoto earthquake disaster in Japan. It can be confirmed that the fluctuation occurred along the fault from the epicenter.

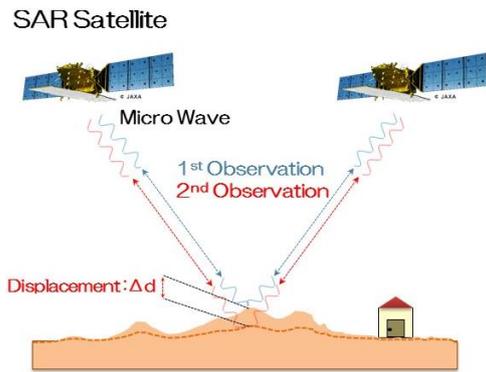


Fig-1.InSAR Analysis Methodology

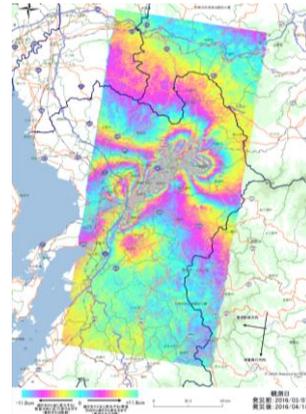


Fig-2.Crustal Deformation Analysis by InSAR

■ **About the service**

This service applies a discount price when applying the following conditions to perform observation (InSAR analysis and monitoring) with the provision of multiple image acquisitions during certain period of time.

< **Applicable condition** >

Data sets acquired within 1 year from the first acquisition date under the same conditions (observation location / observation mode / polarization / angle) are applicable to InSAR package price.(Users shall purchase 5 or more scenes acquired within 6 months from the first acquisition date.) And, before accepting orders, we will check the possibility of acquisition.(After confirming the possibility, we will notify you and then you can place an official order.)

< **Prices of this service** >

Observation Mode	InSAR Package Price	For Reference Only Standard Sales Price (New Acquisition)
Spotlight (SPT)	Yen 400,000/scene	Yen 550,000/scene
Stripmap (SM)	Yen 200,000/scene	Yen 390,000/scene
ScanSAR (WD)	Yen 160,000/scene	Yen 230,000/scene

* Prices listed on the left exclude any tax (e.g. withholding taxes, VAT, GST and similar taxes), duties, stamps, surcharges, clearance costs and other fees.

- ◇ SpotLight (SPT) : To achieve most detailed observation resolution 1m×3m (observation area25km)
- ◇ StripMap (SM) : High Resolution Mode
Select resolution from 3m, 6m or 10m (Observation area 50km or 70km)
- ◇ ScanSAR (WD) : Wide Area Observation Mode
One time wide area observation available (Resolution 60m~100m、 observation area 350km or 490km)

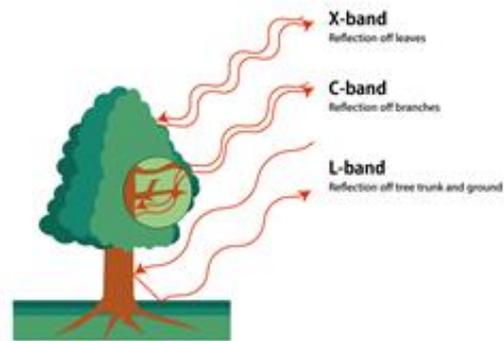
Note: In this service, customers can order the combination of new acquisition data with archived data.

■ALOS-2 satellite

ALOS-2 is a Japanese Earth Observation Satellite equipped with L-band surface visualization radar "PALSAR - 2" sensor. PALSAR-2 is a Synthetic Aperture Radar that transmits radio waves to the ground surface and receives radio waves reflected from the ground surface to obtain information. Unlike optical sensors, it is capable of observing day and night, and in all weather conditions. It is widely used in various fields such as disaster situation grasping, environmental monitoring, land use survey and resource exploration.

< About L-band >

The L-band is one of the bands of microwave (frequency: 300 MHz to 3 THz, wavelength: electromagnetic wave of 0.1 m to 1.0 mm), representing frequency of 1 to 2 GHz and wavelength of 15 to 30 cm. L-band has a characteristic that radio waves pass through vegetation and part of it reaches the ground surface.



Therefore, it is also possible to obtain information on vegetation and the ground surface.

■ Background of PASCO Satellite Business

In 2005, PASCO launched a project to provide geospatial information using satellites, and in earnest with the commencement of the operation of TerraSAR-X satellite in December 2007, PASCO was fully involved in the satellite business. As of September 2018, we have the commercial right to use 20 Earth Observation satellites operated around the world for our geospatial solutions services in Japan. Additionally, we provide the solution services globally by utilizing satellites' data such as landslide monitoring in the mountainous areas, ground change monitoring, urban change analysis, agricultural land management, etc.

■ Inquiries about this article

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ALOS-2 data and this service are available for purchase through the distributors.

< Details about ALOS-2 data, ALOS-2 distributors >

• ALOS-2 website

<http://en.alos-pasco.com/>

• Inquiry about ALOS-2

mail: order@alos-pasco.com

• Website for International Distributors

<http://en.alos-pasco.com/list/>