



The Joint PI Meeting of JAXA Earth Observation Missions FY2019

INFORMATION

20

January

The welcome party venue has been changed from Hall 15E to Hall 16D.

15

January

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January

Information note is updated. Hope it will help your visit to Japan.

22

November

Homepage of "The Joint PI Meeting of JAXA Earth Observation Missions FY2019" was opened.

OUTLINE

Title	▶ Joint PI Meeting of Global Environment Observation Mission FY2019
Date	▶ January 20 (Monday) - 24 (Friday), 2020 Joint Plenary Session is planned to be held on the afternoon of January 22, 2020
Place	▶ TKP Shinbashi Conference Centre Saiwai building, 1-3-1 Uchisaiwaichō, Chiyoda-ku, Tokyo-to 100-0011
Entry qualification	▶ This meeting can be attended only PI and CI. 【ALOS-2, ALOS-3, MOLI】 This meeting can be attended only PI, CI and JAXA satellite mission person

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Schedule

Registration Desk : 12B (12th floor)

Floor Map 

		Meeting room									
Date		Hall16D	Hall15E	Hall15D	Hall11C	Hall11F	Hall14E	Hall15A	Hall15C	Conference 16B	Ha
Jan. 20 mon	AM					GCOM-W AMSR3	GCOM-C				
	PM			ALOS-2 Plenary		GCOM-W AMSR3	GCOM-C	ALOS-2			
Jan. 21 tue	AM					GCOM-W AMSR3	GCOM-C	ALOS-2	ALOS-2		H (C
	PM				Earth CARE	GCOM-W AMSR3	GCOM-C	ALOS-2	ALOS-2		H (C
Jan. 22 wed	AM		GCOM-C	K&C (Closed)	GCOM-W AMSR3 & GPM					ALOS-3	
	PM			Plenary Poster							

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	PM		GPM	GCOM-C	ALOS-2	ALOS-2	
Jan. 24	AM	ALOS-2 Plenary	GPM				
fri	PM		GPM	MOLI (Closed)			

Agenda

Registration Desk : 12B (12th floor)

Floor Map 

Date	Time	Session	Agenda
	09:00-18:30	GCOM-W & AMSR3	
	09:00-18:30	GCOM-C	
Jan. 20 mon	13:00-18:00	ALOS-2 Plenary	 Update as appropriate
	14:40-18:00	ALOS-2	Same as above ALOS-2 Plenary
	09:00-18:30	GCOM-W & AMSR3	
	09:00-18:30	GCOM-C	
Jan. 21 tue	13:00-18:30	EarthCARE	
	10:00-18:00	ALOS-2	Same as above ALOS-2 Plenary
	10:00-17:15	K&C	Closed
Jan. 22 wed	09:00-09:50	PMM / GPM	
	09:50-12:00	GCOM-W, AMSR3 & GPM	

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	09:45-12:00	ALOS-3	
	13:30-16:30	Plenary	
	13:00-18:15	Poster	  (Poster List)
	18:30-20:30	Welcome Party (¥1,000)	
	09:00-18:30	PMM / GPM	
	09:00-18:30	GCOM-C	
Jan. 23 thu	10:00-18:00	ALOS-2	Same as above ALOS-2 Plenary
	14:00-17:30	K&C	Closed
	09:00-18:30	PMM / GPM	
Jan. 24 fri	09:00-12:00	ALOS-2 Plenary	Same as above ALOS-2 Plenary
	09:00-18:30	ALOS-4	
	13:30-16:00	MOLI	

REGISTRATION

Pre-registration is required for attendance.

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ACCESS

TKP Shinbashi Conference Centre

Saiwai building, 1-3-1 Uchisaiwaichō, Chiyoda-ku, Tokyo-to 100-0011

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Secretariat doesn't have any block booking of these hotels.
In Shimbashi area, there are plenty of hotels except mentioned below.

Shimbashi Map ☆



1. Daiichi Hotel Tokyo (★★★★★) 1-2-6 Shimbashi, Minato-ku, Tokyo 105-0004 (170m to the venue)

2. Sotetsu Fresa Inn Shimbashi-Hibiya (★★★) 1-14-3 Shimbashi, Minato-ku, Tokyo 105-0004 (200m to the venue)

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4. **the b shimbashi** (★★★) 1-17-13 Nishishimbashi, Minato-ku, Tokyo 105-0003 (400m to the venue)
5. **APA Hotel Shimbashi Toranomom** (★★★) 2-6-9 Nishishimbashi, Minato-ku, Tokyo 105-0003 (500m to the venue)

CONTACT

The Joint PI Meeting of JAXA Earth Observation Missions Secretariat

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Time Table of ALOS-2 Session

* Oral presentation time includes 5 minutes for Q&A

Version 7, as of Jan. 22, 2020

Date	Start	End	No.	Speaker	Affiliation	Research Title	
Jan. 20 (Monday)	13:00	-	14:20		ALOS-2 Plenary Hall 15D	Co-Chairs: Takeo Tadono, Masato Ohki (JAXA)	
	13:00	-	13:10	0:10	1 Shinichi Sobue	JAXA	Welcome Remarks
	13:10	-	13:30	0:20	2 Takeo Tadono	JAXA	ALOS-2 RA / EO RA Status and Summary of the last PI Workshop
	13:30	-	13:50	0:20	3 Masato Ohki	JAXA	Observation Status of PI Super Sites and Basic Observation Scenario Updates
	13:50	-	14:10	0:20	4 EORC Orderdesk	JAXA / RESTEC	Product Order Information and FAQ for PI
	14:10	-	14:20	0:10	5		Group Photo
	14:20	-	14:40	0:20			Break
	14:40	-	17:00			Vegetation, Forestry and Wetland Hall 15D	Co-Chairs: Masato Hayashi, Takeshi Motohka (JAXA)
	14:40	-	15:00	0:20	1 Manabu Watanabe	Tokyo denki university	Trial of deforestation detection in Japan with PALSAR-2 data
	15:00	-	15:20	0:20	2 Akira Kato	Chiba University	Quantifying fire trends from time series analysis
	15:20	-	15:40	0:20	3 Rajesh Bahadur Thapa	ICIMOD	Improving aboveground forest carbon stocks estimation method using ALOS 2/PALSAR-2 data
	15:40	-	16:00	0:20	4 Yessy Arvelyna	Remote Sensing Technology Center of Japan	Observation of Peat Dome and Peatland Subsidence using DInSAR Analysis on PALSAR-2 Data
	16:00	-	16:30	0:30			Poster Session
				P1	Lan Wu	Hokkaido University	Mapping Japan forest aboveground biomass using machine learning techniques with an integration of PALSAR and MODIS data
			P2	Dewan M. E. Haque	University of Dhaka	Biomass Estimation for an Improved Understanding of the Enhanced Carbon Emission due to Forest Clearing in Ukha and Teknaf for Rohingya Settlements	
			P3	Johan Fransson	Swedish University of Agricultural Sciences	Integrating SAR backscatter, ICESat GLAS metrics and allometric functions towards an improved estimation of forest biomass	
	16:30	-	17:00	0:30		Discussion	
Jan. 21 (Tuesday)	10:00	-	17:50		Disaster and Earthquake Hall 15A	Co-Chairs: Masato Ohki, Souta Hirayama, Takeshi Motohka (JAXA)	
	10:00	-	10:40	0:40		Poster Session	
				P1	Pakhrur Razi	Center of Disaster Monitoring and Earth Observation	Long-term Observation in Seismic Gap area on the Sumatra Megathrust zone using ALOS-1 and ALOS-2
				P2	Wen Liu	Chiba University	Monitoring of the 2018 Kilauea's eruption in the lower East Rift Zone using multi-temporal PALSAR-2 imagery
				P3	Rou-Fei Chen	Chinese Culture University	Estimation of time-series surface deformation in potential large scale landslide by using ALOS/ALOS2 Satellite Imagery
	10:40	-	17:50			Oral Session	
	10:40	-	11:00	0:20	1 Paul Lundgren	Jet Propulsion Laboratory	Application of ALOS-2 to active volcanoes
	11:00	-	11:20	0:20	2 Emma Hill	Nanyang Technological University	Natural hazards monitoring and disaster response for South and Southeast Asia using Synthetic Aperture Radar data
	11:20	-	11:40	0:20	3 Sang-Ho Yun	Jet Propulsion Laboratory	Damage and Flood Mapping with Multi-Temporal SAR Observations
	11:40	-	12:00	0:20	4 Youichiro Takada	Hokkaido University	Crustal deformation along the Philippine fault detected by PALSAR-2 interferograms.
	12:00	-	12:20	0:20	5 Taku Ozawa	National Research Institute for Earth Science and Disaster Resilience	Utilization of PALSAR-2 for volcano observation
	12:20	-	12:40	0:20	6 Manabu Hashimoto	Kyoto University	Postseismic deformation of the 2016 Kumamoto earthquake detected by ALOS-2 with ionospheric correction
	12:40	-	13:00	0:20	7 Giulia Tessari	sarmap SA	Integration of InSAR and GNSS data to monitor volcanic activity of Sakurajima calderas, Japan
	13:00	-	14:00	1:00			Lunch break
	14:00	-	14:20	0:20	8 Tumen Chimitdorzhiev	Institute of Physical Material Science of the Siberian Branch of the RAS (IPMS SB RAS)	Monitoring of changes in backscattering mechanisms in landslide zones using radar polarimetry on the example of the Bureya river bank collapse
	14:20	-	14:40	0:20	9 Chaoying Zhao	Chang'an University	Landslides inventory mapping and monitoring along the entire Jinsha River catchment, China with ALOS/PALSAR-1/2 and Sentinel-1 SAR datasets
	14:40	-	15:00	0:20	10 Junichi Susaki	Kyoto University	Monitoring of 3-D land subsidence integrating PSI and GPS data by weighted least square method
	15:00	-	15:20	0:20	11 Guijie Wang	China Institute for Geo-Environmental Monitoring	Locating and Monitoring of Landslides Based on Small Baseline Subset InSAR
	15:20	-	15:40	0:20	12 Josaphat Tetuko Sri Sumantyo	Chiba University	Monitoring of Disaster Areas in Indonesia using DInSAR ALOS Series
	15:40	-	16:00	0:20	13 Wenbin Xu	Central South University	A logarithmic model based simultaneous co and postseismic slip inversion method using ALOS-2 and Sentinel-1 data: application to the 2017 Mw 7.3 Sarpol Zahab Earthquake, Iran
16:00	-	16:20	0:20			Break	
16:20	-	16:40	0:20	14 Quentin Dumont	Laboratoire Magmas et Volcans	InSAR monitoring and magma intrusions modelling at Piton de la Fournaise volcano (Réunion Island)	
16:40	-	17:00	0:20	15 Akira Hirose	The University of Tokyo	Pixel-by-pixel phase optimization and its enhancement of polarimetric scattering mechanisms in PolInSAR	
17:00	-	17:20	0:20	16 Masanobu Shimada	Tokyo Denki University	Subsidence monitoring of the hilly areas in the Kanto-plane using the L-band Time series Interferometry combined with the GNSS instruments	
17:20	-	17:50	0:30			Discussion	
Jan. 22 (Wednesday)	10:00	-	13:00		TBD Session Hall 15D	Co-Chairs: TBD	
	10:00	-	10:20	0:20	1		
	10:20	-	10:40	0:20	2		
	10:40	-	11:00	0:20	3		
	11:00	-	11:20	0:20	4		
	11:20	-	11:40	0:20	5		
	11:40	-	12:00	0:20	6		
	12:00	-	12:20	0:20	7		
	12:20	-	12:40	0:20	8		
	12:40	-	13:00	0:20			Discussion
	13:00	-	14:00	1:00			Lunch break
	13:00	-	16:00	3:00		Plenary Hall 15D	
	16:15	-	18:00	1:45		Poster Session Hall 15D	
				1	Liudmila Zakharova	Kotel'nikov Institute of Radioengineering and Electronics	Polarimetric decomposition of forest: incident angle and weather dependence
				2	Chinatsu YONEZAWA	Tohoku Univ.	Observation of agricultural field damage in southern Sanriku area caused by Typhoon Hagibis on 2019
				3	Ake Rosenqvist	soloEO	the Global Mangrove Watch
			4	Duan Ho	HCMC Institute of Resources Geography	A STUDY ON THE POSSIBILITY OF USING ALOS PALSAR FOR ESTIMATING THE NATURAL FOREST ABOVE-GROUND BIOMASS IN THUA THIEN HUE PROVINCE, VIETNAM	
			5	EORC	JAXA	Introduction of ALOS-3	
			6	EORC	JAXA	Introduction of ALOS-4	
18:30	-	20:30	2:00		Welcome Reception Hall 16D		

Jan. 23 (Thursday)	10:00	-	13:30			Calibration, Polarimetry and Interferometry Hall 15A	Co-Chairs: Katia Urata, Masato Ohki (JAXA)
	10:00	-	10:20	0:20	1	Cunren Liang California Institute of Technology	ALOS-2 L-band multi-mode InSAR development at JPL/Caltech
	10:20	-	10:40	0:20	2	Ridha Touzi Canada Centre for Remote Sensing	Polarimetric PALSAR2 for enhanced characterization of peatlands and subsurface permafrost
	10:40	-	11:00	0:20	3	Jun Su Kim German Aerospace Centre	Comparison of Ionospheric activities captured by SAR and GNSS
	11:00	-	11:20	0:20	4	David Mackenzie 3vGeomatics	Landslide Displacement Map for West Virginia, USA Based on InSAR Analysis of High-Resolution L-Band ALOS-2 and ALOS-4 SAR Images.
	11:20	-	11:40	0:20	5	Fumitaka Ogushi Harris Geospatial	Improvement of persistent scatterer for non-linear displacement and its performance with PALSAR-1 dataset
	11:40	-	12:00	0:20	6	Ryo Natsuaki The University of Tokyo	Pulse-by-pulse Radio Frequency Interference detection using multi-receiver SAR data
	12:00	-	12:20	0:20	7	Fang SHANG The University of Electro-Communications	DISCUSSION ON THE ROTATION TRANSFORMATION IN FULLY POLARIMETRIC SYNTHETIC APERTURE RADAR DATA INTERPRETATION
	12:20	-	12:40	0:20	8	Alexander Zakharov Kotelnikov Institute of Radioengineering and Electronics, RAS	Distributed targets for PALSAR-1/2 radiometric calibration
	12:40	-	13:00	0:20	9	Yo Fukushima Tohoku University	Measuring strain accumulation around active faults using ALOS-2 data
	13:00	-	13:30	0:30			Discussion
	13:30	-	14:30	1:00		Lunch break	
	14:30	-	14:50	0:20			
	Jan. 24 (Friday)	10:00	-	11:40			ALOS-2 Plenary
10:00		-	11:00	1:00	1		Session Report (5 mins/session) 1) Vegetation, Forestry and Wetland 2) Disaster and Earthquake 3) Oceanography, Polar Research, Snow and Ice 4) Calibration, Polarimetry and Interferometry 5) Climate, Hydrology, Agriculture, and Health 6) Land-Use and Land-Cover Research 7) Post K&C 8) ALOS-3 CVST (9) ALOS-4 CVST
11:00		-	11:20	0:20	2		Comments on Future Missions
11:20		-	11:35	0:15	3		Summary, Q&A
11:35		-	11:40	0:05	4		Closing Remarks

* Oral presentation time includes 5 minutes for Q&A

* Poster size of the poster presentation is within A-0 size i.e. approx. 84cm width x 120cm height

Time Table of ALOS-2 Session

* Oral presentation time includes 5 minutes for Q&A

Version 7, as of Jan. 22, 2020

Date	Start	End	No.	Speaker	Affiliation	Research Title		
Jan. 20 (Monday)	13:00	-	14:20		ALOS-2 Plenary	Hall 15D	Co-Chairs: Takeo Tadono, Masato Ohki (JAXA)	
	13:00	-	13:10	0:10	1	Shinichi Sobue	JAXA	Welcome Remarks
	13:10	-	13:30	0:20	2	Takeo Tadono	JAXA	ALOS-2 RA / EO RA Status and Summary of the last PI Workshop
	13:30	-	13:50	0:20	3	Masato Ohki	JAXA	Observation Status of PI Super Sites and Basic Observation Scenario Updates
	13:50	-	14:10	0:20	4	EORC Orderdesk	JAXA / RESTEC	Product Order Information and FAQ for PI
	14:10	-	14:20	0:10	5	Group Photo		
	14:20	-	14:40	0:20	Break			
	14:40	-	17:50		TBD Session Hall 15A		Co-Chair: TBD	
	14:40	-	15:00	0:20	1			
	15:00	-	15:20	0:20	2			
	15:20	-	15:40	0:20	3			
	15:40	-	16:00	0:20	4			
	16:00	-	16:20	0:20	5			
	16:20	-	16:40	0:20	6			
	16:40	-	17:00	0:20	7			
	17:00	-	17:20	0:20	8			
	17:20	-	17:50	0:30			Discussion	
	Jan. 21 (Tuesday)	10:00	-	12:40		Oceanography, Polar Research, Snow and Ice Hall 15C		Co-Chairs: Yousei Mizukami, Takahiro Abe (JAXA)
		10:00	-	10:20	0:20	1	Teruhisa KOMATSU	Yokohama College of Commerce
10:20		-	10:40	0:20	2	Leonid M. Mitnik	V.I. Il'ichev Pacific Oceanological Institute FEB RAS	Oceanic and atmospheric dynamic phenomena and sea ice in the Northwest Pacific Ocean observed in L-band and C-band SAR imagery
10:40		-	11:00	0:20	3	Changqing Ke	Nanjing University	Identification of alpine glaciers in the central Himalayas using fully polarimetric L-band SAR data
11:00		-	11:20	0:20	4	Chao Wang	Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences	Permafrost monitoring using ALOS-2 PALSAR-2 data in the northern Qinghai-Tibet Plateau
11:20		-	11:40	0:20	5	Igor Kozlov	Russian State Hydrometeorological University (RSU)	Hot spots and dynamics of submesoscale ocean processes in the Arctic Ocean from L- and C-band SAR observations
11:40		-	12:10	0:30	Poster Session			
				P1	Jun-Beom Jung	Seoul National University	Reduction of wind speed errors in ALOS-2 PALSAR-2 data	
				P2	Kyung-Ae Park	Seoul National University	SEA SURFACE WIND FIELDS IN THE SEAS AROUND THE KOREAN PENINSULA FROM ALOS-2 DATA AND AIR-SEA INTERACTION	
				P3	Chiyuki Narama	Niigata University	Spatial distribution and flow of rock glaciers in the northern Tien Shan.	
12:10		-	12:40	0:30			Discussion	
12:40		-	14:00	1:20	Lunch break			
14:00		-	16:50		TBD Session Hall 15C		Co-Chairs: TBD	
14:00		-	14:20	0:20	1			
14:20		-	14:40	0:20	2			
14:40		-	15:00	0:20	3			
15:00		-	15:20	0:20	4			
15:20		-	15:40	0:20	5			
15:40		-	16:00	0:20	6			
16:00	-	16:20	0:20					
16:20	-	16:50	0:30			Discussion		
Jan. 22 (Wednesday)	10:00	-	13:00		TBD Session Hall 15D		Co-Chairs: TBD	
	10:00	-	10:20	0:20	1			
	10:20	-	10:40	0:20	2			
	10:40	-	11:00	0:20	3			
	11:00	-	11:20	0:20	4			
	11:20	-	11:40	0:20	5			
	11:40	-	12:00	0:20	6			
	12:00	-	12:20	0:20	7			
	12:20	-	12:40	0:20	8			
	12:40	-	13:00	0:20			Discussion	
	13:00	-	14:00	1:00	Lunch break			
	13:00	-	16:00	3:00	Plenary Hall 15D			
	16:15	-	18:00	1:45	Poster Session Hall 15D			
				1	Liudmila Zakharova	Kotel'nikov Institute of Radioengineering and Electronics	Polarimetric decomposition of forest: incident angle and weather dependence	
				2	Chinatsu YONEZAWA	Tohoku Univ.	Observation of agricultural field damage in southern Sanriku area caused by Typhoon Hagibis on 2019	
				3	Ake Rosenqvist	soloEO	the Global Mangrove Watch	
				4	Duan Ho	HCMC Institute of Resources Geography	A STUDY ON THE POSSIBILITY OF USING ALOS PALSAR FOR ESTIMATING THE NATURAL FOREST ABOVE-GROUND BIOMASS IN THUA THIEN HUE PROVINCE, VIETNAM	
				5	EORC	JAXA	Introduction of ALOS-3	
				6	EORC	JAXA	Introduction of ALOS-4	
18:30	-	20:30	2:00	Welcome Reception Hall 16D				

Jan. 23 (Thursday)	10:00	-	12:00			Climate, Hydrology, Agriculture, and Helth	Hall 15C	Chair: Takeo Tadono (JAXA)
	10:00	-	10:20	0:20	1	Masato Furuya	Hokkaido University	ALOS2 InSAR applications to climate and weather: post-wildfire ground deformation in Eastern Siberia and tropospheric dispersive phase during heavy rain
	10:20	-	10:40	0:20	2	Christian Koyama	Tokyo Denki University	Monitoring of Small-Scale Soil Moisture Dynamics with Very High-Resolution ALOS-2 PolSAR Data
	10:40	-	11:00	0:20	3	Zheng-Shu Zhou	Commonwealth Scientific and Industrial Research Organisation (CSIRO)	Improved Crop Type Classification by Polarimetric Analysis of ALOS-2 Dual-pol Data
	11:00	-	11:30	0:30		Poster Session		
					P1	Emilie Matsumoto-Takahashi	National Center for Global Health and Medicine	Risk map of shistosomiasis mekongi in Lao PDR : Spatial epidemiology using earth observation satellite data
					P2	Atsuko Nonomura	Kagawa University	Estimation of slope deformation with interferometric SAR using ALOS-2/PALSAR-2 data
	11:30	-	12:00	0:30				Discussion
	12:00	-	14:00	2:00		Lunch break		
	14:00	-	16:30			Land-Use and Land-Cover Research	Hall 15C	Co-Chairs: Kei Ohyoshi, Souta Hirayama (JAXA)
	14:00	-	14:20	0:20	1	Hideaki Iwaki	Shimizu Corp.	Civil Infrastructure Monitoring using ALOS-2/PALSAR-2
	14:20	-	14:40	0:20	2	Lu Xu	Aerospace Information Research Institute, Chinese Academy of Sciences	ALOS-2 PALSAR-2 data in Land Use Land Cover Mapping and multitemporal cropland classification
	14:40	-	15:00	0:20	3	Shubham Awasthi	Indian Institute of Technology Roorkee, India	Urban Land Subsidence Monitoring and Features Extraction using Spaceborne SAR datasets
	15:00	-	15:20	0:20	4	Guang Liu	Institute of Remote Sensing and Digital Earth, CAS	Surface subsidence and landslide Monitoring with ALOS1/2 images
	15:20	-	15:40	0:20	5	Hasi Bagan	Shanghai Normal University	Local climate zone classification using optical and PALSAR-2 data
15:40	-	16:00	0:20	6	Shoko KOABAYASHI	Tamagawa University	Weed density evaluation in Eucalyptus plantation forests using ALOS-2/PALSAR-2 data	
16:00	-	16:30	0:30				Discussion	
16:30	-	17:00	0:30		Poster Session			
					TBD			
17:00	-	17:30	0:30				Discussion	
Jan. 24 (Friday)	10:00	-	11:40			ALOS-2 Plenary	Hall 15D	Co-Chairs: Takeo Tadono, Masato Ohki (JAXA)
	10:00	-	11:00	1:00	1			Session Report (5 mins/session) 1) Vegetation, Forestry and Wetland 2) Disaster and Earthquake 3) Oceanography, Polar Research, Snow and Ice 4) Calibration, Polarimetry and Interferometry 5) Climate, Hydrology, Agriculture, and Helth 6) Land-Use and Land-Cover Research 7) Post K&C 8) ALOS-3 CVST (9) ALOS-4 CVST)
	11:00	-	11:20	0:20	2			Comments on Future Missions
	11:20	-	11:35	0:15	3			Summary, Q&A
	11:35	-	11:40	0:05	4			Closing Remarks

* Oral presentation time includes 5 minutes for Q&A

* Poster size of the poster presentation is within A-0 size i.e. approx. 84cm width x 120cm height

Long-term Observation in Seismic Gap Area on the Sumatra Megathrust Zone using ALOS-1 and ALOS-2

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Abstract

Mentawai Island is part of the Sumatra megathrust zone, where is Indo-Australian plate which infiltrates underneath to the Eurasian plate, causes the area along the west coast of Sumatra lifted little by little until critical point and then breaks down and produces the earthquake. An insignificant earthquake that occurred in the Mentawai megathrust zone for a long time will be a source of the potential epicenter of the earthquake in the future. Observation deformation in Mentawai Island due to the subduction plate is required to estimate the potentials epicenter and magnitude of an earthquake. The monitoring is carried out by extracting the ALOS-1 and ALOS-2 Synthetic Aperture Radar (SAR) data provided by Japan Aerospace Exploration Agency (JAXA). The observation starting from May 2009 to September 2019. Differential Interferometry Synthetic Aperture Radar (D-InSAR) and Persistent Scatterer Interferometry (PSI) technique were applied. D-InSAR technique is used to extract information about the land deformation for every cycle of SAR acquisition time while the PSI technique is to obtain information trend, velocity and displacement of area for whole observation time. Two areas in Mentawai Island has significant deformation (subsidence and uplift). Subsidence area in both North segment of North Pagai and North segment of South Pagai consistently with 18.7 cm/year. While, uplift in the Southwest segment of North Pagai and Phase South Segment of South Pagai with 15.4 cm/year. The result should be an awareness for Indonesian government and local authorities for a potential earthquake in the area.

Introduction

The Sumatra megathrust zone is one of active seismic area that constantly threatened by earthquake hazard. Based on the historical of earthquake along Sumatra seismic belt in last decade recorded the highest magnitude, M 9.15 in 2004, followed M 8.6 in 2005 both of them located in North segment and M. 8.4 in 2007 in south segment Sumatra megathrust zone. However, until today is not significant earthquake occur between them. The segment located in Mentawai Island that consist three small island, Siberut, Sipora and Pagai. The aims of research is monitoring land deformation due to the thrust force Indo-Australia to Eurasia in Pagai.

Study Area

The study areas is North Pagai and South Pagai that part of Mentawai Island with coordinate 100° 12' E and 2° 48' S. The area located in the megathrust zone whereas the Indo-Australia plate underneath to the Eurasian plate.

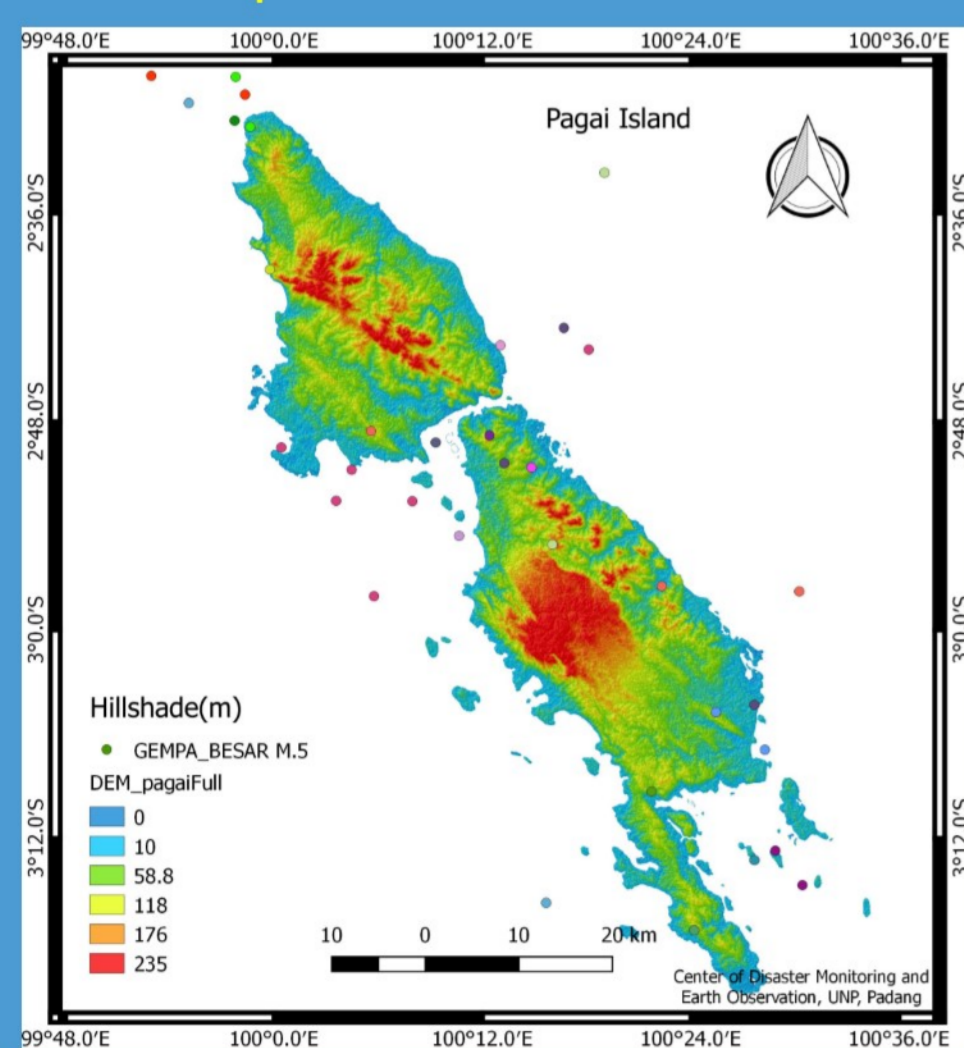


Figure 1. The area of study, Mentawai Island, Sumatra, Indonesia

Method

Differential Interferometry Synthetic Aperture Radar (D-InSAR) and Persistent Scatterer Interferometry (PSI) techniques employed to extract information about the land deformation in Pagai. The D-InSAR technique used to obtain information about the topography changing for each acquisition time. While the PSI Technique to observe whole acquisition time by exploiting multi SAR images (slave) over the same area with different time respect to one master image geometry.

Result

In North segment of North Pagai and North segment of South Pagai has significant subsidence consistently based on the ALOS-1 PALSAR 1 dan ALOS-2 PALSAR 2 satellite observation. In Southwest segment of North Pagai and South Segment of South Pagai, both the area is uplift. The result validate by comparing with optical satellite image.

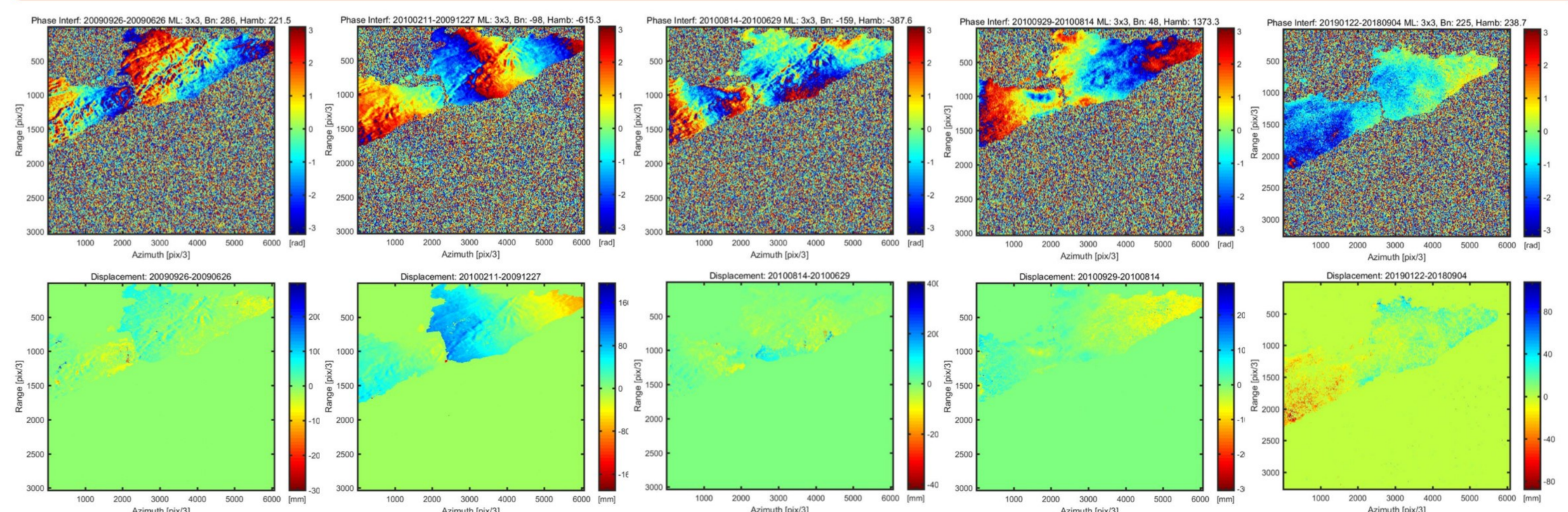


Figure 2. Topography changing observe using ALOS-1 and ALOS-2 from May, 2009 to September 2019 carried out by D-InSAR Technique

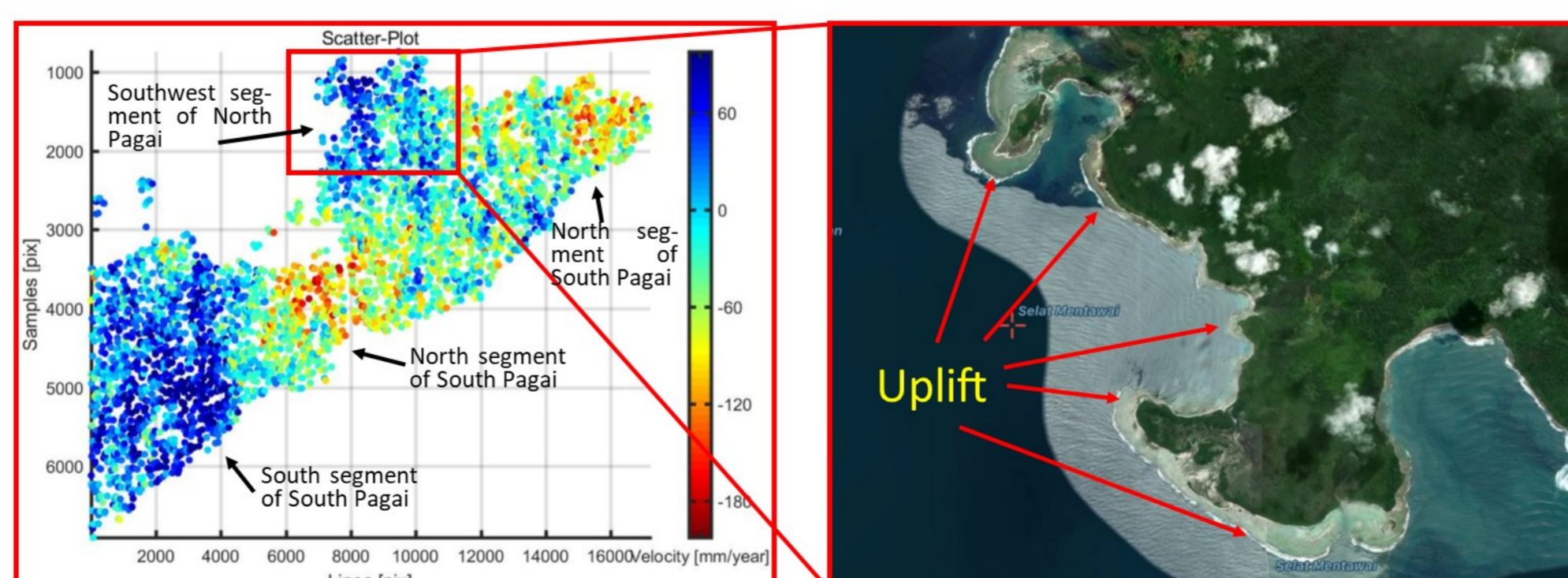


Figure 3. Land deformation observe using ALOS-1 and ALOS 2 extracted by PSI technique

Conclusions

Both D-InSAR and PSI Technique successfully extracted information land deformation in seismic gap of Mentawai Island. The North segment of North Pagai and North segment of South Pagai is Subsidence about 18.7 cm/year. While the Southwest segment of North Pagai and South segment of South Pagai is Uplift with 15.4 cm/year.