Review of AOMSUC-8 Results and Country Reports

21 October, 2017
SRC "Planeta", Roshydromet

Outline of the presentation

- Review of AOMSUC-8 results
- Country reports summary:

- Satellite data used to address regional challenges;
- Collection, processing and utilization of satellite data and products;
- Gap analysis

Review of AOMSUC-8 Results (1)

- **16-17 October**: Training Event on Satellite Data and Product Application (115 attendees);
- **18-20 October**: The Eighth Asia/Oceania Meteorological Satellite Users' Conference
- **21 October**: The 5th meeting of the Coordinating Group of the RA II WIGOS Project
- **Hosted** by ROSHYDROMET & ROSCOSMOS
- **Attended** more than 170 scientists, users and satellite operators, representing 28 countries
- **AOMSUC-9** will take place in Indonesia (Jakarta)

Review of AOMSUC-8 Results (2)

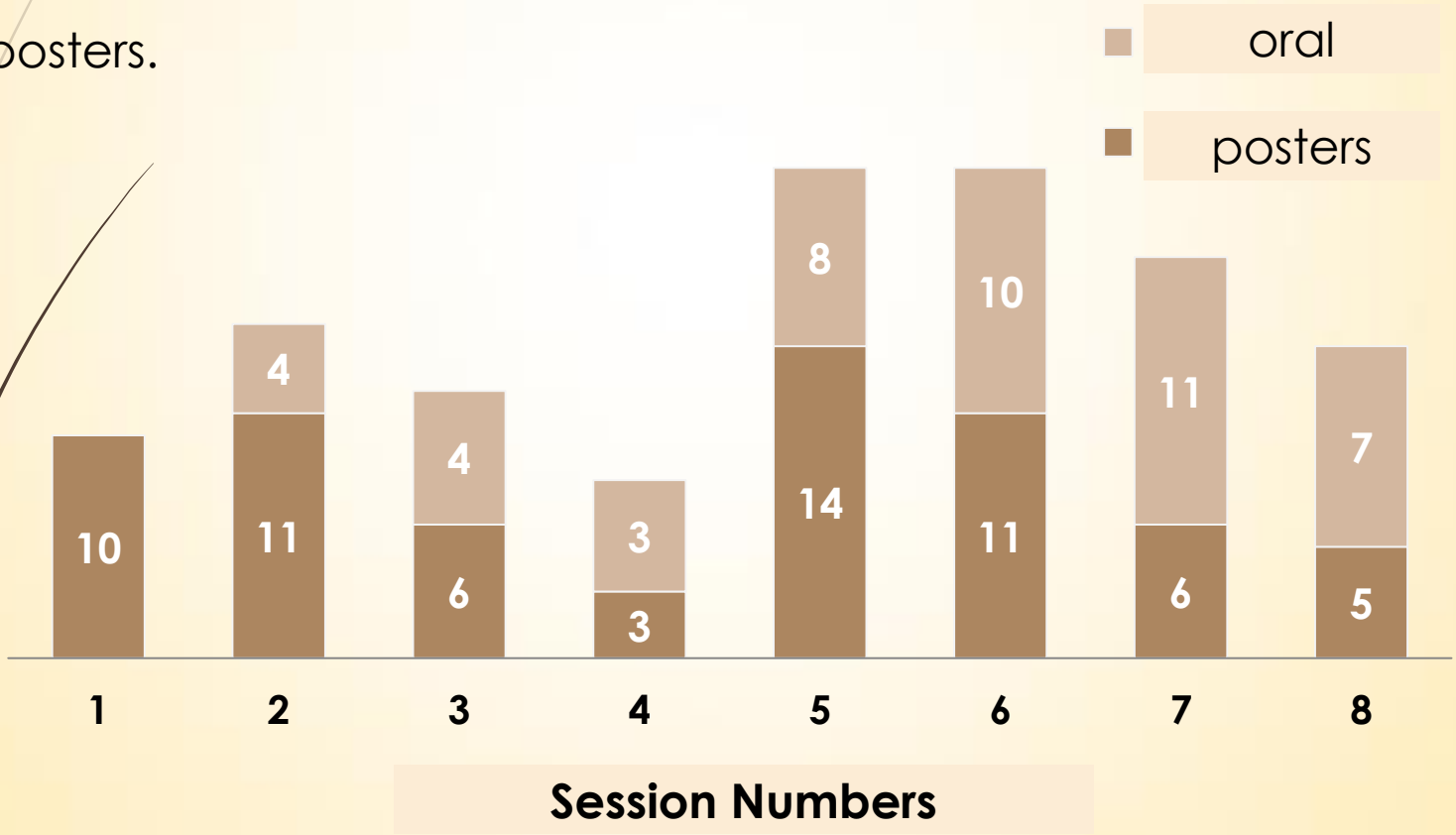
Conference session topics

- (a) Current and future meteorological satellite programs and user activities/plans within Asia/Oceania
- (b) Facilitation of data access and utilization, including training activities
- (c) Atmospheric parameters derived from satellite observations
- (e) Application of satellite data to numerical weather prediction
- (d) Application of satellite data to weather analysis and disaster monitoring
- (f) Application of satellite data for climate and environmental monitoring
- (g) Land surface and ocean parameters derived from satellite observations
- (h) Global Spaced-based Inter-Calibration System (GSICS)

Review of AOMSUC-8 Results (3)

AOMSUC-8 programme includes:

- 68 oral papers;
- 51 posters.



Review of AOMSUC-8 Results (4)

Country Reports Summary

Submitted 16 country reports:

- FMS,
- Hong Kong (China),
- Indonesia,
- Kazakhstan,
- Kyrgyzstan,
- Maldives,
- Mongolia,
- Myanmar,
- New Zealand,
- Pakistan,
- Sultanate of Oman,
- Saudi Arabia,
- Singapore,
- Tajikistan,
- Thailand,
- Turkmenia.

Satellite data used to address regional challenges (1)

Countries	Major hydrometeorological disasters	Satellite data used to address regional challenges
Federated States of Micronesia (FMS)	typhoon and landslide	GOES, Himawari-8
Hong Kong (China)	typhoon and storm surge, flooding and landslide due to severe thunderstorms and rainstorms	Himawari-8, FY-2, COMS-1, METEOSAT, GOES, AQUA, TERRA/MODIS, SNPP, NOAA, Metop
Indonesia	flood, landslide, tunnel wind/gust, forest fire, earthquake	Himawari-8, FY-2, AQUA, TERRA/MODIS, SNPP, NOAA, GSMaP (Global Satellite Mapping of Precipitation) and others

Satellite data used to address regional challenges (2)

Countries	Major hydrometeorological disasters	Satellite data used to address regional challenges
Kazakhstan	strong winds, abnormal cold and abnormal heat, drought, heavy rainfall, blizzards, dust storms, floods, mudflows, avalanches, landslides and landfalls, flooding of the coastal areas	METEOSAT, NOAA
Kyrgyz Republic	avalanche, mudflow and flood, heavy rain/snowfall, storm	METEOSAT, NOAA
Maldives	thunderstorm & lightening, heavy rain and flood, strong winds, tidal and swell waves, tropical cyclones	FY-2, METEOSAT, INSAT/KALPANA

Satellite data used to address regional challenges (3)

Countries	Major hydrometeorological disasters	Satellite data used to address regional challenges
Mongolia	abnormal cold	FY-2, NOAA, AQUA, TERRA/MODIS, SNPP
Myanmar	tropical cyclone, heavy rains strong winds, storm surges, continuous rain spell, tornadoes Thunderstorms, continuous dry spell, floods, droughts, tsunami, landslide	Himawari-8, FY-2
New Zeeland	tropical cyclone, strong wind, heavy rain , thunderstorm	Himawari, GOES, METEOSAT, AQUA, TERRA/MODIS, Metop, SNPP

Satellite data used to address regional challenges (4)

Countries	Major hydrometeorological disasters	Satellite data used to address regional challenges
Sultanate of Oman	tropical cyclone, tsunami, flash flood, dust storms	METEOSAT, Metop, AQUA, TERAA/MODIS, NOAA
Pakistan	earthquakes, flood, cyclones, drought, tsunami	FY-2
Saudi Arabia	flash flood due to severe rainstorm	METEOSAT-10
Singapore	transboundary haze, tropical cyclones, tsunami, volcanic eruption, radioactive fallout	Himawari-8, FY-2, Metop, AQUA, TERAA/MODIS, NOAA, SNPP

Satellite data used to address regional challenges (5)

Countries	Major hydrometeorological disasters	Satellite data used to address regional challenges
Tajikistan	flash flood, heavy precipitation and thunderstorms, strong winds, dust storms	METEOSAT
Thailand	rainfall, floods	Himawari-8, FY-2, AUQA, TERRA/MODIS, NOAA, GSMaP (Global Satellite Mapping of Precipitation)
Turkmenistan	drought, storms and strong winds, severe cold and frost, rapid melting of snow, severe hail, catastrophic dusty cyclones, floods and mudflows, sand storms, heavy showers and extreme heat	METEOSAT

Collection, processing and utilization of satellite data and products (1)

Countries	Satellite data received/processed	Satellite-based products used
Federated States of Micronesia (FMS)	No satellite data received and/or processed	Used the following datasets, such as JAXA Real-time Rainfall Watch (Global Satellite Mapping of Precipitation), Himawari 8 (Infrared Color Loop), Global Mapping from GFS/NCEP/US National Weather Service.
Hong Kong (China)	Himawari-8 Reception System (HimawariCast, HimawariCloud); CMACast Reception System (FY-2E, FY2G, FY-2F (rapid scan), NOAA, MODIS, METEOSAT, GOES; MTSAT Reception System (COMS-1, FY-2G/VISSR); MODIS Reception System (AQUA, TERRA/MODIS, NPP); POES Reception System (NOAA, Metop)	Himawari-8 data are used for producing the following products: RGB composite images, cloud property products, atmospheric products, volcanic ash, LST and SST, etc. POES and MODIS satellites are used for the following products: profile temperature, cloud properties, NDVI, SST, etc.

Collection, processing and utilization of satellite data and products (2)

Countries	Satellite data received/processed	Satellite-based products used
Indonesia	Receive a number of satellite data: Himawari-8, FY-2, AQUA, TERRA/MODIS, SNPP, NOAA, GSMaP and etc.	Produce a number of enhanced products such as RGB Images, potential rainfall, RDCA, hotspot and smoke, volcanic ash, HCAI and others
Kazakhstan	Receive METEOSAT-8 data (SADSA station)	Use RGB Imagery based on METEOSAT-8. Use satellite-based products available online.
Kyrgyz Republic	Receive METEOSAT-8 data (SADSA station), NOAA data (ALISA-SK station), CMACast Reception System	Use RGB Imagery for weather forecast and warnings of hazardous hydrometeorological phenomena
Maldives	CMACast Reception System (FY-2E, FY-2D)	Use satellite-based product available online (including METEOSAT data)

Collection, processing and utilization of satellite data and products (3)

Countries	Satellite data received/processed	Satellite-based products used
Mongolia	Receive FY-2C, FY-2D, TERRA, AQUA/MODIS, Suomi NPP, NOAA18	Produce cloud and precipitation parameters, snow and vegetation cover products, forest wildfires and etc.
Myanmar	Receive Himawari-8 data, CMACast Reception System	Produce a number of RGB products based on SATAID software
New Zeeland	Himawari-8 Reception System (HimawariCloud, HimawariCast); Receive and process data from polar satellites (AQUA, TERRA, Metop, NOAA, SNPP)	Produce satellite-based products: Level1b imagery 'standard' RGB composites, cloud top height for aviation
Sultanate of Oman	Receive METEOSAT, Metop, NOAA (EUMETCast and direct reception)	A number of RGB products, as well as meteorological parameters

Collection, processing and utilization of satellite data and products (4)

Countries	Satellite data received/processed	Satellite-based products used
Pakistan	Receive FY-2G	Fy-2 data and images used for now-casting, flood monitoring, tropical cyclone, agrometeorology, drought monitoring
Saudi Arabia	Receive METEOSAT data	Satellite-based products: - RGB products; - Rain Estimation Computing; - Rain Probability Computing; - Cloud Winds Computing; - Cloud Top Height; - Cloud Top Temperature; - Tropospheric Humidity at medium and upper levels; - Dust, Cb, Air masses and Fog channels.

Collection, processing and utilization of satellite data and products (5)

Countries	Satellite data received/processed	Satellite-based products used
Singapore	Receive Himawari-8 (HimawariCloud, HimawariCast), FY-2G/E (direct reception), Metop, AQUA, TERAA/MODIS, NOAA, SNPP	Produce RGB products, fire detection, aerosol optical depth, cloud top hight, sounding profiles and etc.
Tajikistan	No satellite data received.	Use METEOSAT-based product available online.
Thailand	Receive Himawari-8, FY-2, AUQA, TERRA/MODIS, NOAA	Produce a number of satellite-based products (RGB imagery, as well as meteorological parameters products)
Turkmenistan	Receive METEOSAT data (SADSA station),	Do not produce satellite-based product, use data available online (EUMETSAT products)

Gaps analysis (1)

Countries	Challenges addressed
Federated States of Micronesia (FMS)	Technical problems (slow internet connection)
Indonesia	Customize satellite-based products for specific users; develop satellite-based climatological products; multi-satellite data processing system for better spatial and temporal resolution derived products
Kyrgyz Republic	Need for modernization the equipment for receiving and processing data and product from new generation satellites. Need for having trained personnel, computer facilities and up-to-date software for effective satellite applications for hydrometeorological services.
Maldives	Need for capacity building in satellite utilization
Myanmar	Need for historical satellite data for the reanalysis, for extent satellite-based rainfall estimation techniques

Gaps analysis (2)

Countries	Gaps analysis
New Zeeland	Need for Level 2 products generation for aviation; NWP data assimilation: Himawari cloud top pressure, Himawari Rainfall Rate/probability of rainfall
Pakistan	More bands for increased data, capacity building
Saudi Arabia	Needed professional analysis software, human resources
Singapore	Needs for the modernization of the hardware due to the increasing number of satellite data; Limited capability to meet the growing demands for Level-2 GEO products.

Thank you!

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