



New WP: ocean surface vector wind standards and metrics

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CEOS WGCV-46

May 11, 15, teleconference



- Background and objectives
- Progress
- Project plan
- Confirmed teams



Background and objectives



■ Background

✧ Requirement from the OSVW-VC

The existing scatterometers operated at either C or Ku-band, are being flown on different satellites, which form the virtual constellation and can provide vast and heterogeneous near real-time observations with spatial and temporal continuity and internal physical consistency in time and space.

However, the consistency of the data quality of these satellites and instruments are the prerequisite for the success of this virtual constellation, while inter-calibration/comparison can offer spatial and temporal characteristics of the observing systems to enable the consistency.





Background and objectives



■ Background (cont'd)

The main focus of this work will be:

- Establish the standards/guidelines of approaches for calibration/inter-calibration of calibration and validation of spaceborne radar scatterometer measurements and wind retrieval approaches;
- Define metrics for quality assessment and assurance of the data products, to support the virtual constellation of ocean surface vector wind.

The main scope of the standard and metrics cover:

- Calibration, including cross-calibration of L1 (sigma 0) data;
- Validation of L2 (wind product) data;
- Quality indices of L1 and L2 data.





Background and objectives



■ Objectives

✧ General

The objective of this project is to develop the standard and metrics of spaceborne radar scatterometer measurement and wind retrieval approaches for ocean surface vector winds, which support the cross-calibration as well as comparison between data from different scatterometer satellites.



■ Objectives

- ✧ Development and validation of algorithms and methods for calibration of L1 data (Sigma 0) using different reference or metrics, such as active calibrator, global ocean data and natural terrestrial targets,
- ✧ Development of guidelines and standards for calibration and validation of radar scatterometer for ocean surface winds,
- ✧ Development of metrics for quality of scatterometer and wind data products,
- ✧ Identifying and organizing reference datasets, including both satellite data and in-situ measurements, for calibration and cross-calibration for ocean surface vector wind.

■ Expected deliverables

- ✧ Requirements for calibration/cross-calibration of scatterometer data;
- ✧ Models and algorithms for calibration/cross-calibration of scatterometer data;
- ✧ Metrics for quality of scatterometer and wind data products;
- ✧ Reference datasets for calibration/cross-calibration purpose.

- 2018.8 group meeting to discuss the status of scatterometer calibration;
- 2019.5 discuss during IOVWST for the project definition
- 2019.7 propose WP and confirm contribution
- 2020.4.21 teleconference to confirm resources
- 2020.5.6 confirmation of leading members

- Organize the project team;
- Define the requirements and specifications;
- Develop and define the model, algorithm and procedures;
- Identify requirement of datasets (satellite and other data) for this project.
- Establish examples of applications benefited from the results of this project



Preliminary schedule



Activity	Milestone	Target Date
Organize the team	Contribution/team member commitment and task assignment	May 31, 2020
Define the requirements and specifications;	Draft document for requirements and specifications of calibration/inter-calibration of spaceborne scatterometer data and validation of scatterometer OSVW data.	October 31, 2020
Define the requirements for datasets within this project	Document about the requirements	October 31, 2020
Establishment of standards and metrics for data processing, quality control and calibration procedures	Draft of standard/guideline for scatterometer calibration/inter-calibration of L1 data; Draft of standard/guideline for cross-comparison/validation of OSVW L2 data from spaceborne scatterometer. Draft of metrics for spaceborne scatterometer data quality assessment and control.	June 30, 2021
Establishment of datasets within the project	Instructions of archive data sets of past and existing scatterometers, NWP datasets for calibration/validation purpose	September 30, 2021
Demonstration of applications and deliverable release	For examples, see, e.g., www.wmo-sat.info/oscar/applicationareas	December 31, 2021
Finalize the standard/guideline		December 31, 2021



Leading members



Person Responsible: Xiaolong Dong

No.	Name	Organization	Country
1	Chang, Paul	NOAA/NESDIS	USA
2	Dong, Xiaolong	National Space Science Center (NSSC), CAS	China
3	Kumar, Raj	Indian Space Research Organisation (ISRO)	India
4	Lin, Wenming	Nanjing University of Information Science and Technology	China
5	Linow, Stefanie	EUMETSAT	Germany
6	Portabella, Marcos	Institut de Ciències del Mar (ICM-CSIC)	Spain
7	Stoffellen, Ad	Koninklijk Nederlands Meteorologisch Instituut (KNMI)	The Netherlands
8	Zou, Juhong	National Satellite Oceanic Application Service (NSOAS)	China

