

March 16, 2004

Dear Ocean Vector Winds Science Team Members:

This letter announces the release to the OVWST of preliminary SeaWinds wind products calculated from scatterometer measurements that are rain-flagged and corrected using Midori-2 AMSR data. OVWST members are invited to analyze and evaluate these preliminary products and to provide input to the SeaWinds Project for refinement and full release later this year. A meeting is being planned in May 2004 for interested OVWST team members to report the results of their evaluation.

Timely completion of this effort will enable validated results to be used to further refine QuikSCAT rain-flagging in advance of a complete reprocessing planned in early 2005.

Background

One unique aspect of the Midori-2 mission was its flight of both the SeaWinds scatterometer and the highly capable, broad-swath AMSR multi-channel microwave radiometer. Since both instruments view the same areas on the Earth nearly simultaneously, it is possible in principle to use AMSR measurements to check each SeaWinds backscatter measurement for the presence of rain and to correct the SeaWinds backscatter data that have been contaminated by atmospheric absorption and atmospheric backscatter from liquid water. From the start, the SeaWinds data product formats and processing systems were designed to generate intermediate AMSR products and to use these AMSR products to correct and/or flag SeaWinds data prior to wind retrieval.

After a period of calibration, the Japanese space agency JAXA has provided the JPL SeaWinds project with a complete set of low-level AMSR data covering the entire Midori-2 period of routine operations (from 10 April – 24 October 2003). Following the plans presented at OVWST meetings over the past 24 months, the JPL SeaWinds project has performed a rapid independent calibration of the AMSR data by comparison with SSM/I and TRMM data and produced a preliminary suite of intermediate AMSR products to support rain flagging and correction of SeaWinds backscatter measurements. These intermediate AMSR products – primarily rain indicator estimates and quantitative corrections for atmospheric attenuation and rain backscatter effects – have been used to reprocess approximately 8 weeks of SeaWinds data through to vector winds. See the attached Readme listing for information on these intermediate products and initial Project comparisons.

OVWST AMSR/SeaWinds Evaluation/Validation Objectives

As was the case with the basic SeaWinds products at the start of the mission, the OVWST is responsible for validating the JPL Project's AMSR-based corrections to the backscatter cross-section measurements and the vector wind products calculated from the corrected cross-sections. Such a validation will inevitably also address the quantitative accuracies of the intermediate AMSR products used to flag rain and to provide the corrections to the SeaWinds measurements. Refinements to the JPL AMSR and SeaWinds processing may be made in response to OVWST findings from this AMSR/SeaWinds validation campaign.

Evaluation Time Line

All OVWST members are invited to analyze these preliminary AMSR intermediate products and AMSR-corrected SeaWinds vector winds. However, as with the basic SeaWinds measurements themselves, not all OVWST members will choose to, or have expertise with, performing these validation analyses. For those OVWST members who participate in this activity, preliminary results should be shared with the Project as they are developed and checked. A meeting for interested OVWST members to present initial quantitative validation results and to define necessary changes (if any) to the preliminary AMSR and SeaWinds algorithms will be held in May, 2004. An OVWST recommendation regarding full public release of (possibly refined) AMSR-corrected SeaWinds products is anticipated in September, 2004.

Evaluation Data Sets and Accessibility

The following preliminary data sets are being prepared and staged for distribution to the OVWST (not for public release) via the PODAAC for evaluation and validation:

- (1) Standard 25 km processed Level 2B winds WITHOUT use of AMSR data, but WITH the standard MUDH and associated autonomous rain flags (currently available through usual PODAAC site);
- (2) Standard 25 km processed Level 2A backscatter products which now include valid AMSR data fields;
- (3) Two sets of preliminary 25 km processed Level 2B vector winds calculated from the AMSR-corrected Level 2A products in (2). (Note that since the autonomous MUDH rain flag has not been retuned for use with the AMSR-corrected SeaWinds backscatter measurements, the MUDH rain flag in these AMSR-corrected Level 2B winds is not accurate and should be ignored. The MUDH rain flag from the original L2B data noted in (1) should be used for comparison.) The two sets of L2B winds, indicated by an extra "A" or "B" in the file name following the rev number, were produced using AMSR-corrected SeaWinds backscatter measurements as follows:
 - (A) only the AMSR atmospheric attenuation correction was applied;
 - (B) both the AMSR atmospheric attenuation correction and an estimate of the backscatter from rain were applied.

Please see the attached Readme for additional information. This attachment will also be posted on the PODAAC ftp site with the data. It will be updated as new information becomes available. The eight weeks of data are available now.

For questions regarding data access, contact the PODAAC SeaWinds data set engineer Richard Chen (Richard.chen@jpl.nasa.gov, 818-354-1259). For questions about AMSR processing, contact Svetla Veleva (svetla.veleva@jpl.nasa.gov, 818-354-7314).

Sincerely,

Kent H. Kellogg
SeaWinds Project Manager