# AMSR2 Research Product Validation result of the High resolution sea ice concentration

Japan Aerospace Exploration Agency
Earth Observation Research Center

# Summary of the HSI algorithm and validation method

Algorithm developer

Georg Heygster (University of Bremen)

Algorithm overview

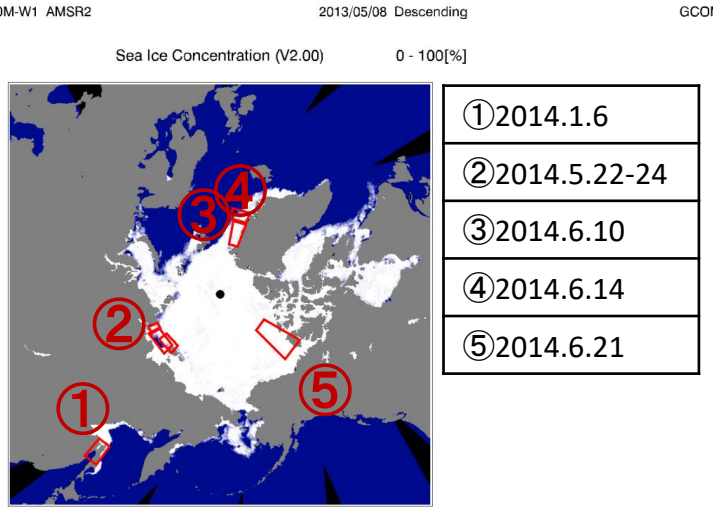
High resolution sea ice concentration product detects the ratio of the sea ice area in each pixel with 5 km spatial resolution mainly using the 89GHz vertical and horizontal polarization brightness temperature based on the characteristics of the brightness temperature and its polarization difference.

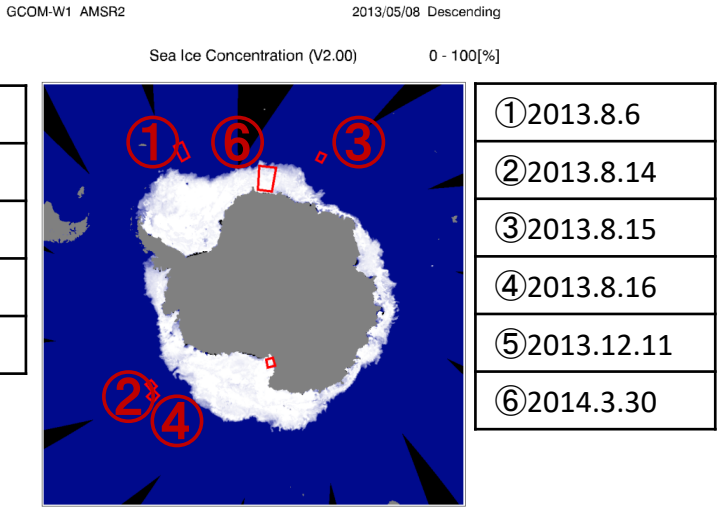
Validation method

Sea ice concentration was compared with detected by Aqua/MODIS visible reflectance (Band1: 620-670nm, Band3: 459-479nm, band4: 545-565nm) data in the sun-lit area.

Target Accuracy

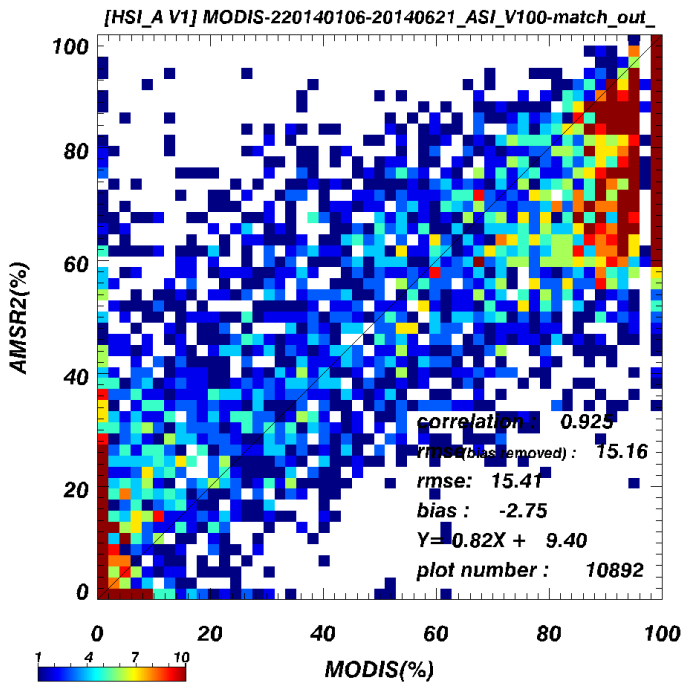
RMSE : 15%



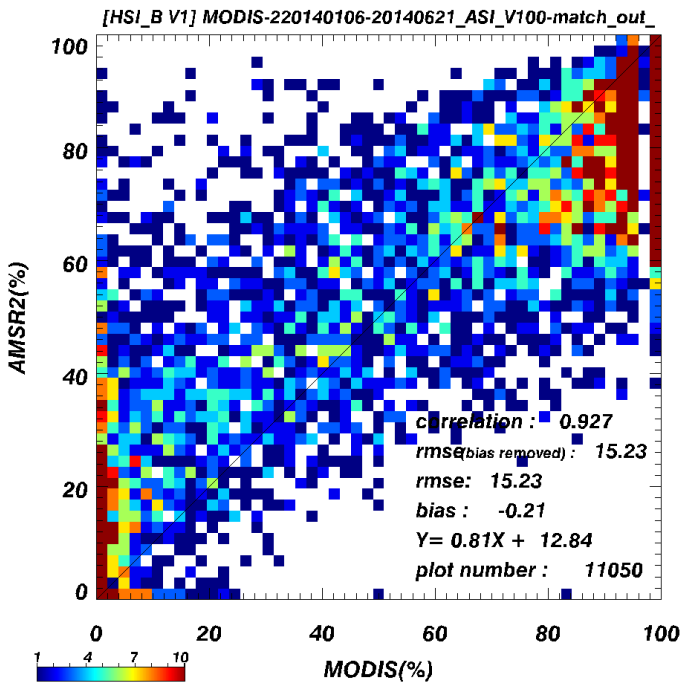



# Validation result (Northern Hemisphere)

## 89GHz A-horn




## 89GHz B-horn

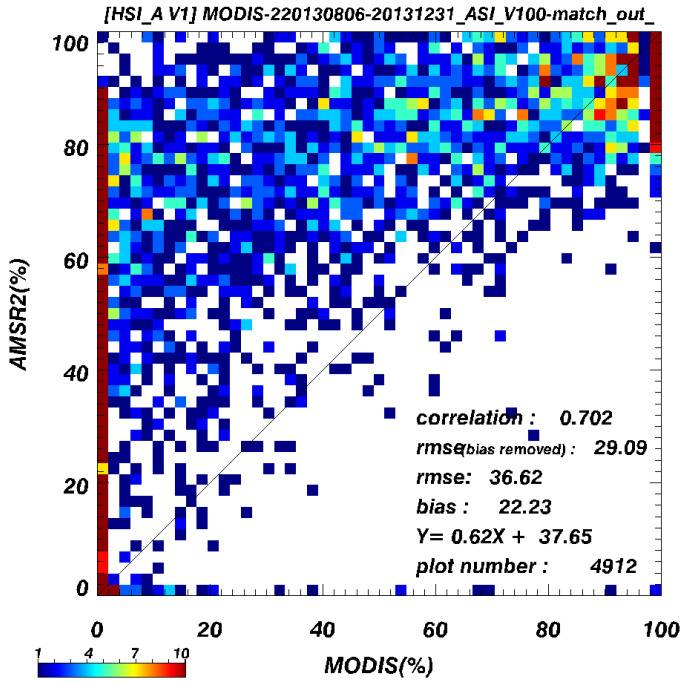



| Validation result (RMSE) | Target Accuracy |
|---|---|
| NH A-horn : 15.41%<br>NH B-horn : 15.23% | 15% |

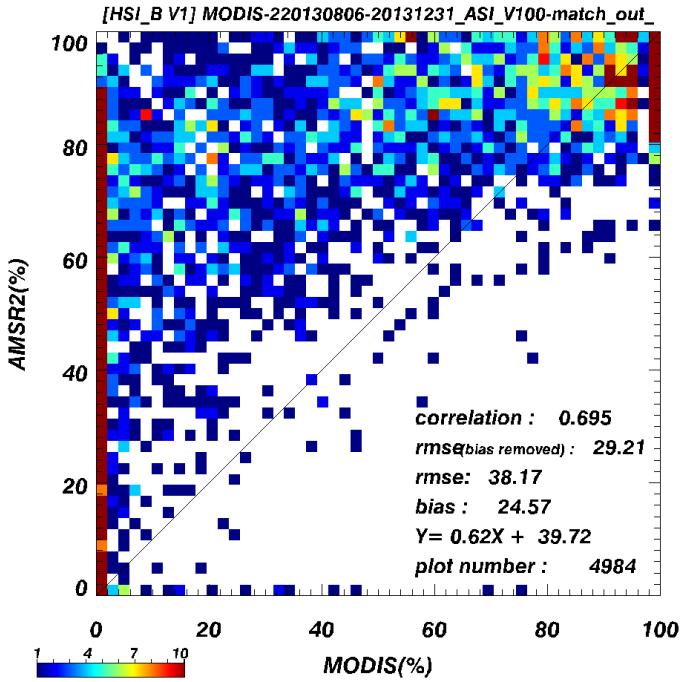
Achieved the target accuracy in the Northern Hemisphere validation

# Validation result (Southern Hemisphere)

89GHz A-horn




89GHz B-horn



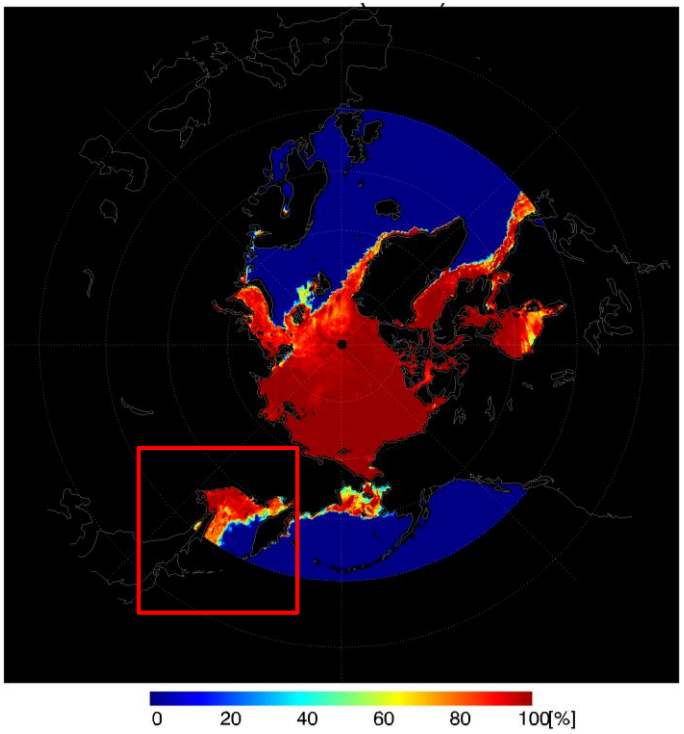

| Validation result (RMSE) | Target Accuracy |
|---|---|
| SH A-horn : 36.62%<br>SH B-horn : 38.17% | 15% |

Algorithm revise and parameter tune-up is on going to achieve the target accuracy

# Target Area Expansion

We focused on the only Arctic sea in the initially algorithm development phase, however in the publish phase, we expanded the target area to 43N including Okhotsk sea.

2016.03.16 Range: 90N-50N




2016.03.16 Range: 90N-43N