

# **Algorithm Developments of SST and SSW for AMSR2/AMSR-E**

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## **Points of SST version up for AMSR2**

- Atmospheric correction using 18V/23V is added to using 36V/23V**
- Wind correction on Tb (6V et al.) is extended to stronger wind speed around 20m/s**
- More accurate evaluation of land contamination is made in coast areas**
- Judgement of Radio Frequency Interference (RFI) is reevaluated**

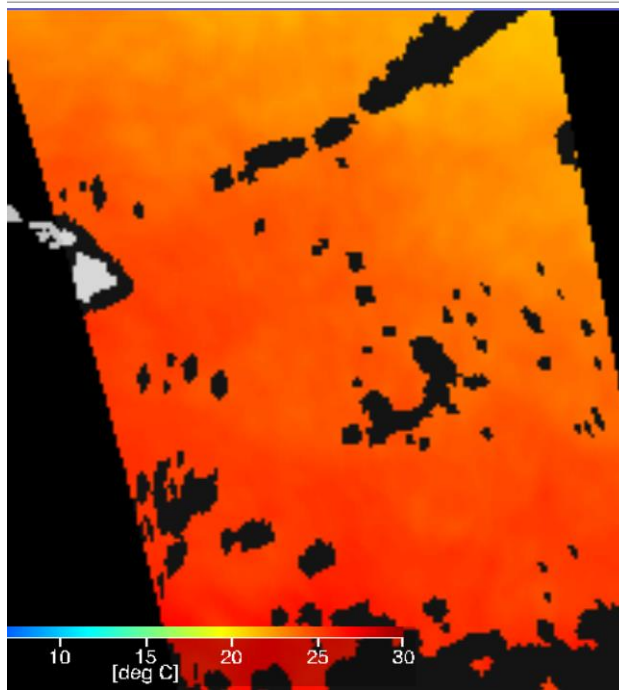
## **Comparison of several corrections on 6V between current and next versions of SST**

	<b>Current</b>	<b>Next</b>
<b>Atmos. corr.</b>	<b>6.6K</b>	<b>8.5K</b>
<b>Wind corr.</b>	<b>6K</b>	<b>12K</b>
<b>Land corr.</b>	<b>1% (~ 1K)</b>	<b>2% (~ 2K)</b>

**Comparison of SST accuracies (rms)  
between normal and extra conditions  
(unit °C)**

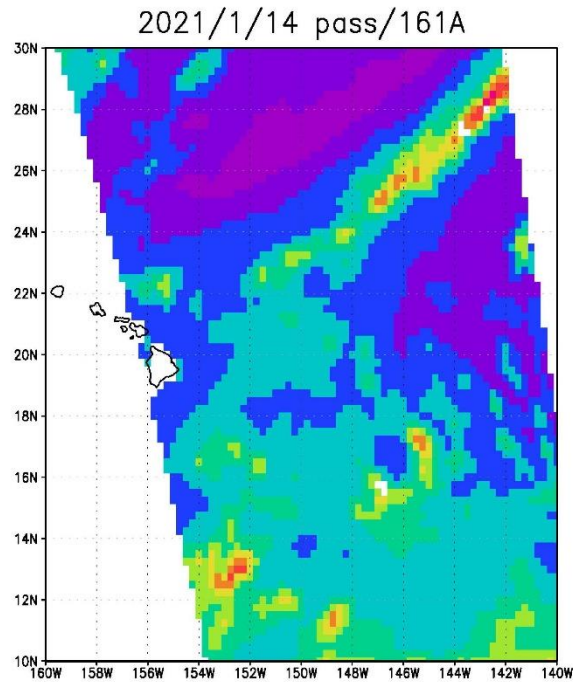
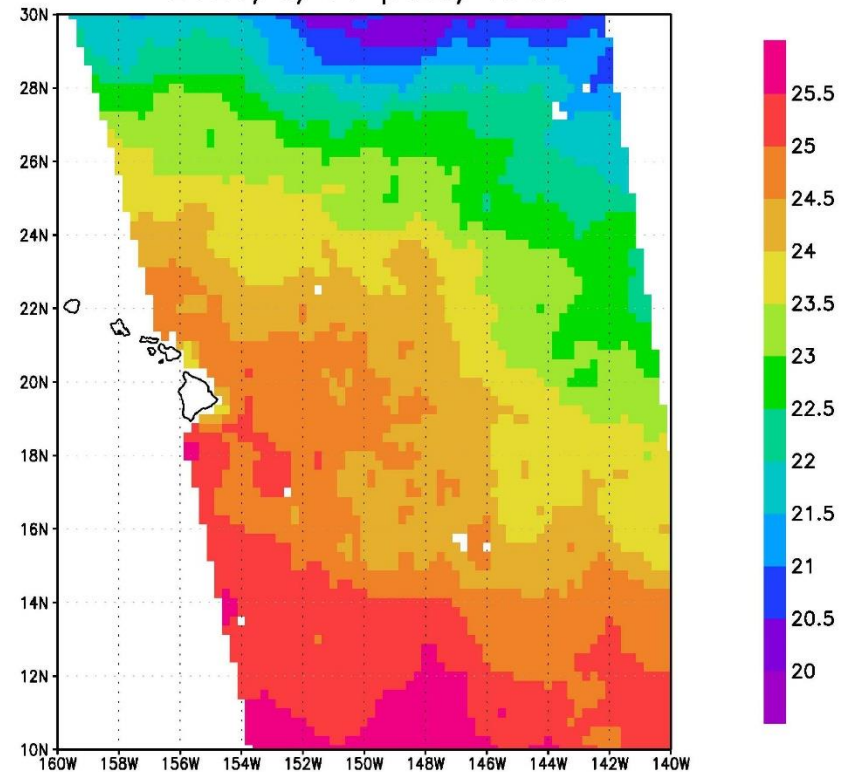
	Normal	Extra
<b>Atmos. corr.</b>	<b>0.478</b>	<b>0.847 (light rain)</b>
<b>Wind corr.</b>	<b>0.478</b>	<b>0.833 (strong wind)</b>
<b>Land corr.</b>	<b>0.06 to 1%</b>	<b>0.06 to 2%</b>
<b>(in coastal ocean)</b>	<b>(land percentage)</b>	
	<b>0.659</b>	<b>0.645</b>

# Current version of SST from JASMES



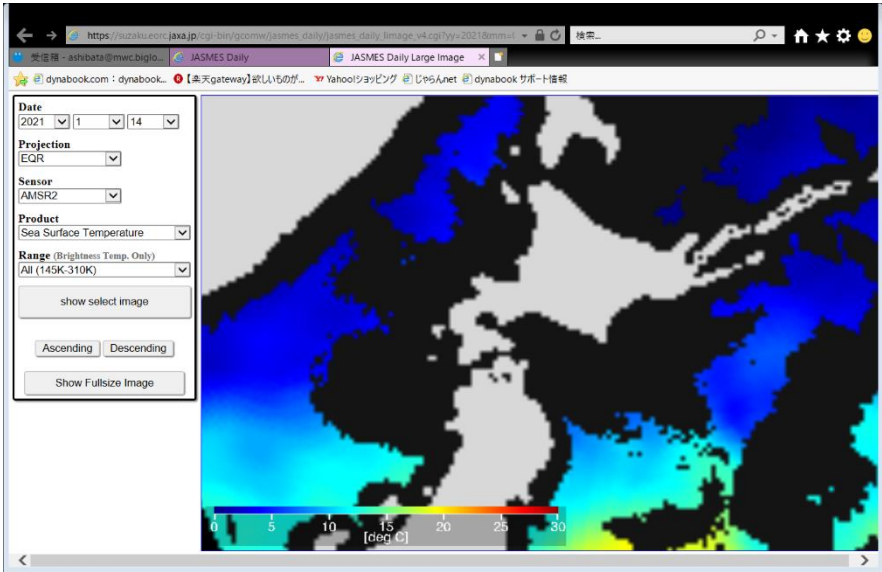
## Next version of SST extended to light rainy areas

2021/1/14 pass/161A



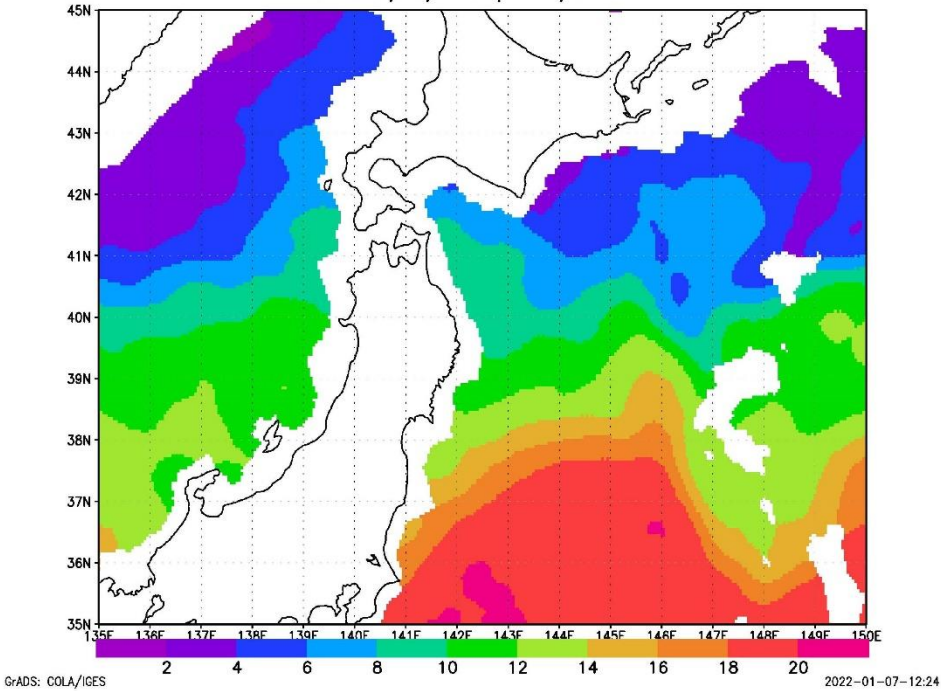
## Atmospheric correction for 6V (Kelvin)

# Current version of SST from JASMES



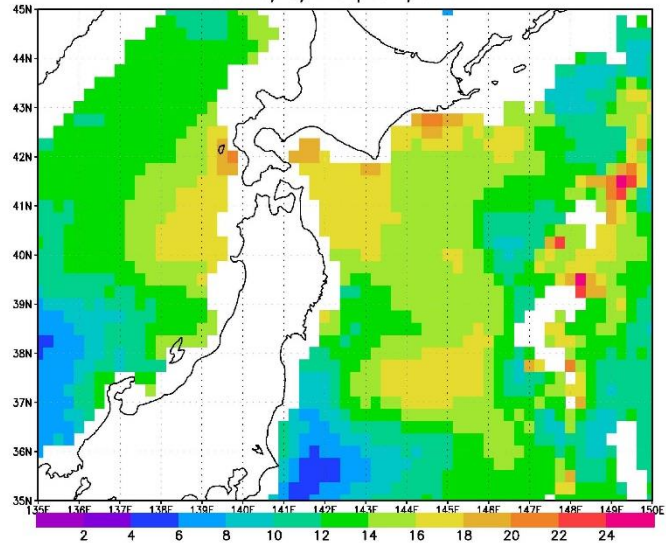
## Next version of SST extended to stronger windy areas

2021/1/14 pass/202A



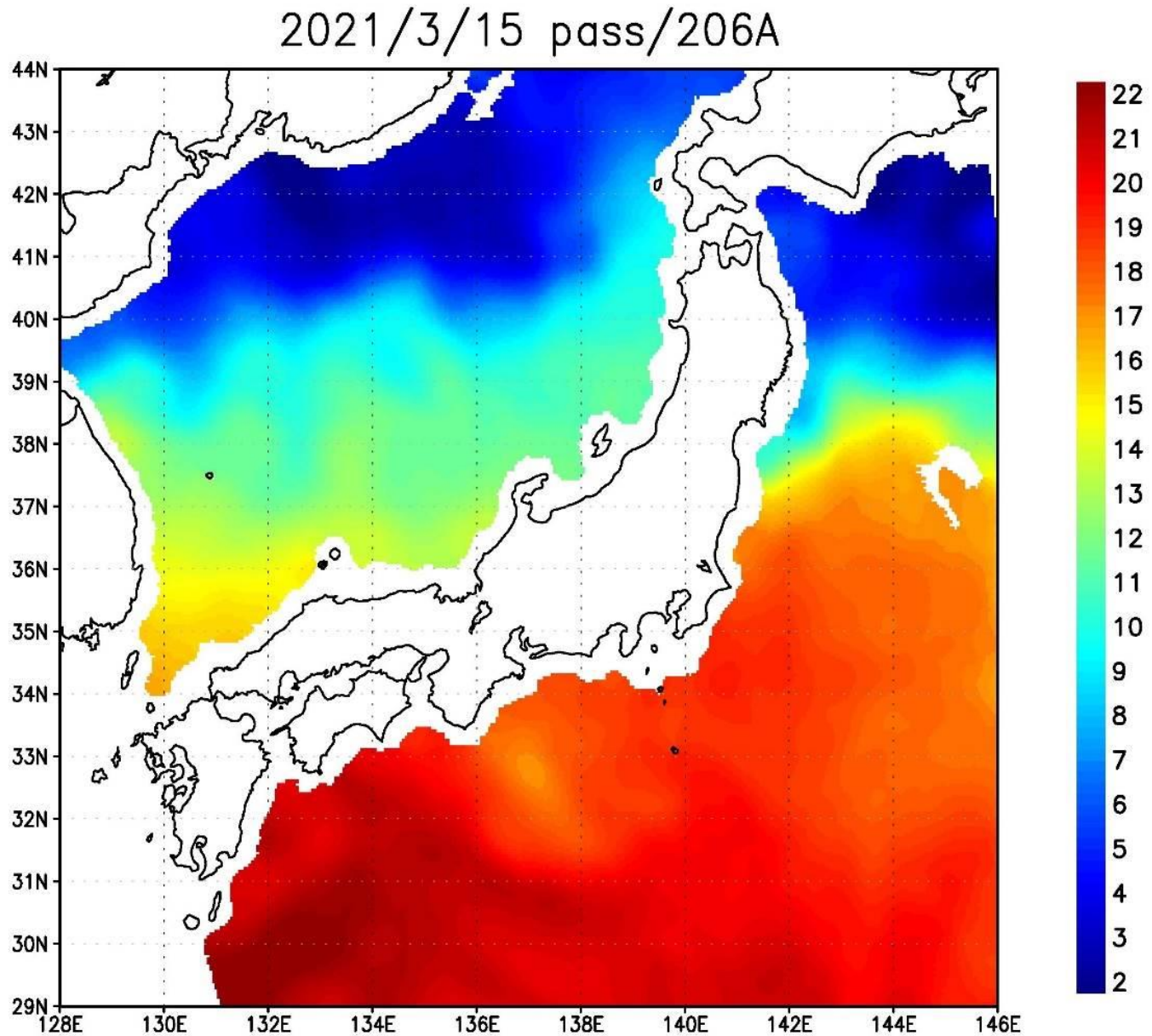
## AMSR2 wind speed

2021/1/14 pass/202A





**In coast area, SST is retrieved about 40Km off from shorelines. But, this may be a limit value even in future.**



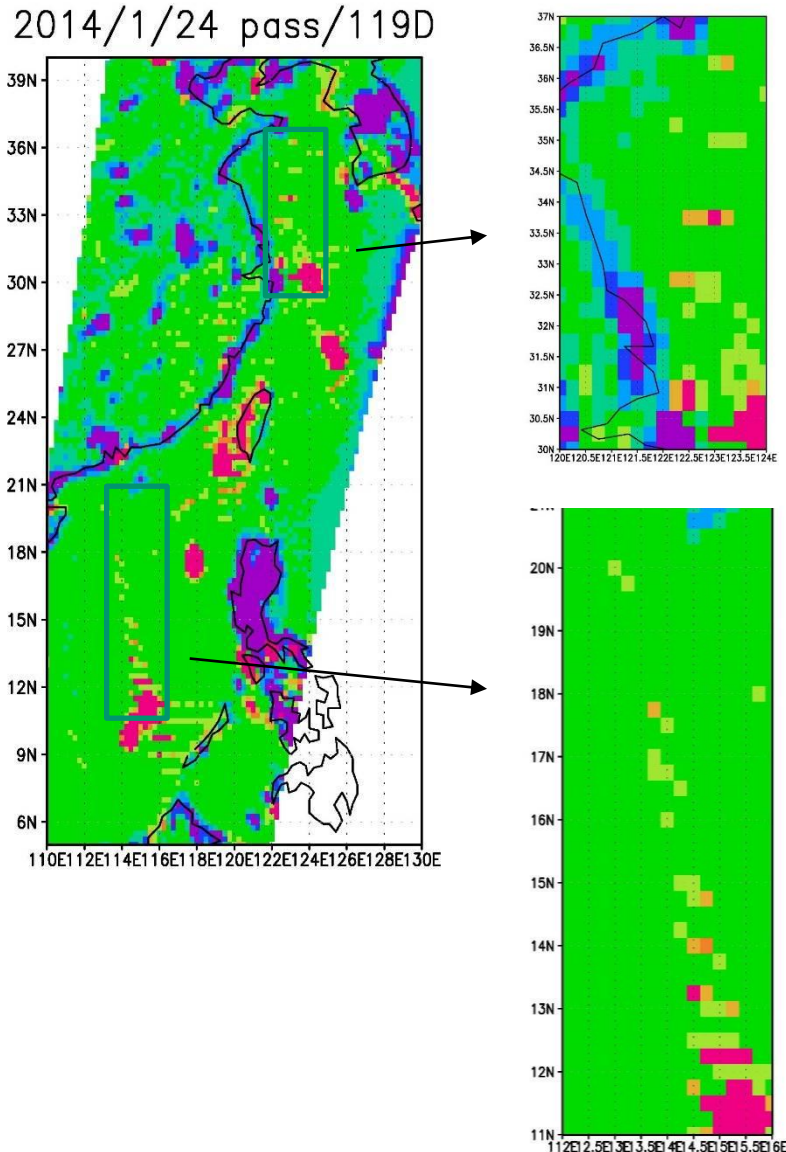
# Reevaluation of RFI

Using 6H-7H difference is effective in detecting RFI. But new types of RFI appeared year by year. Also, weak RFI can't be removed by its method.

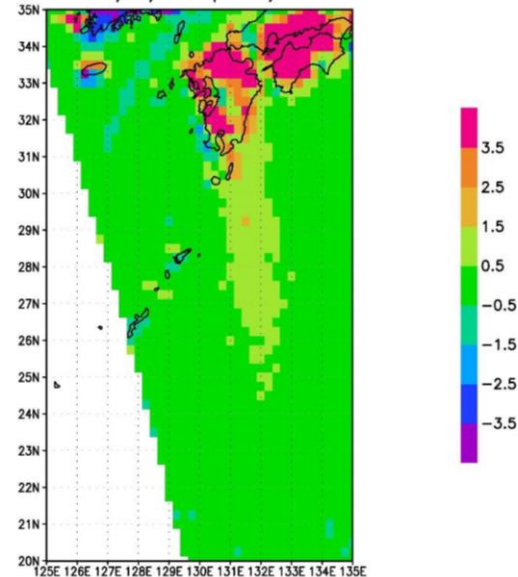
Criterion of RFI is over 2K.

(left) Several strong RFI can be found both in East China Sea and South China sea. In addition, a new type of dotted-like RFI can be found.

(below) Weak RFI can be found south off Kyushu, but it can't be removed because 6H-7H difference is less than 2K.



2021/1/31 pass/209A





# Summary

## Results

- **AMSR2 SST retrieval is extended to light rainy areas, and to strong windy areas, in which extra pixels will be marked by rain or wind flag.**

## Ongoing works

- **Calibration of AMSR2 Tb is continued; a temperature difference between top and bottom of hotload is affecting 6 and 10GHz Tb. Furthermore, another problem may exist in Tb calibration.**
- **AMSR2 SSW is checked whether a trend during 9 years exists or not.**
- **After applying the same parameters of AMSR2 to AMSR-E, a continuity between AMSR-E/AMSR2 SSW will be checked.**