

Introduction of HY-1C satellite mission and ocean color productions

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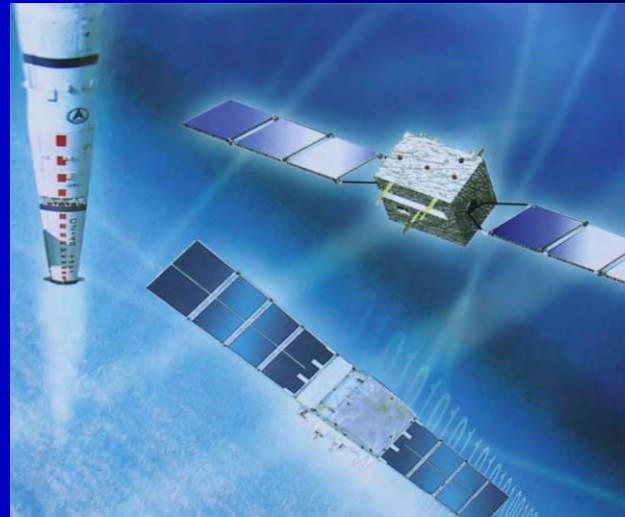
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国家海洋局第二海洋研究所



First Ocean Observation Satellite in China (HY-1A)

- China launched the first ocean satellite HY-1A on 15 May, 2002, together with meteorological satellite FY-1D using same rocket
- HY-1A was an experimental ocean color satellite in China, and successfully operated for about two year (2002.5-2004.4)





HY-1B satellite

Second ocean color satellite of China, **HY-1B** was launched by Long March rocket, in April, 2007.

Sponsored by: State Oceanic Administration, (SOA)
Manufacturer: the Chinese Academy of Space Technology (CAST)



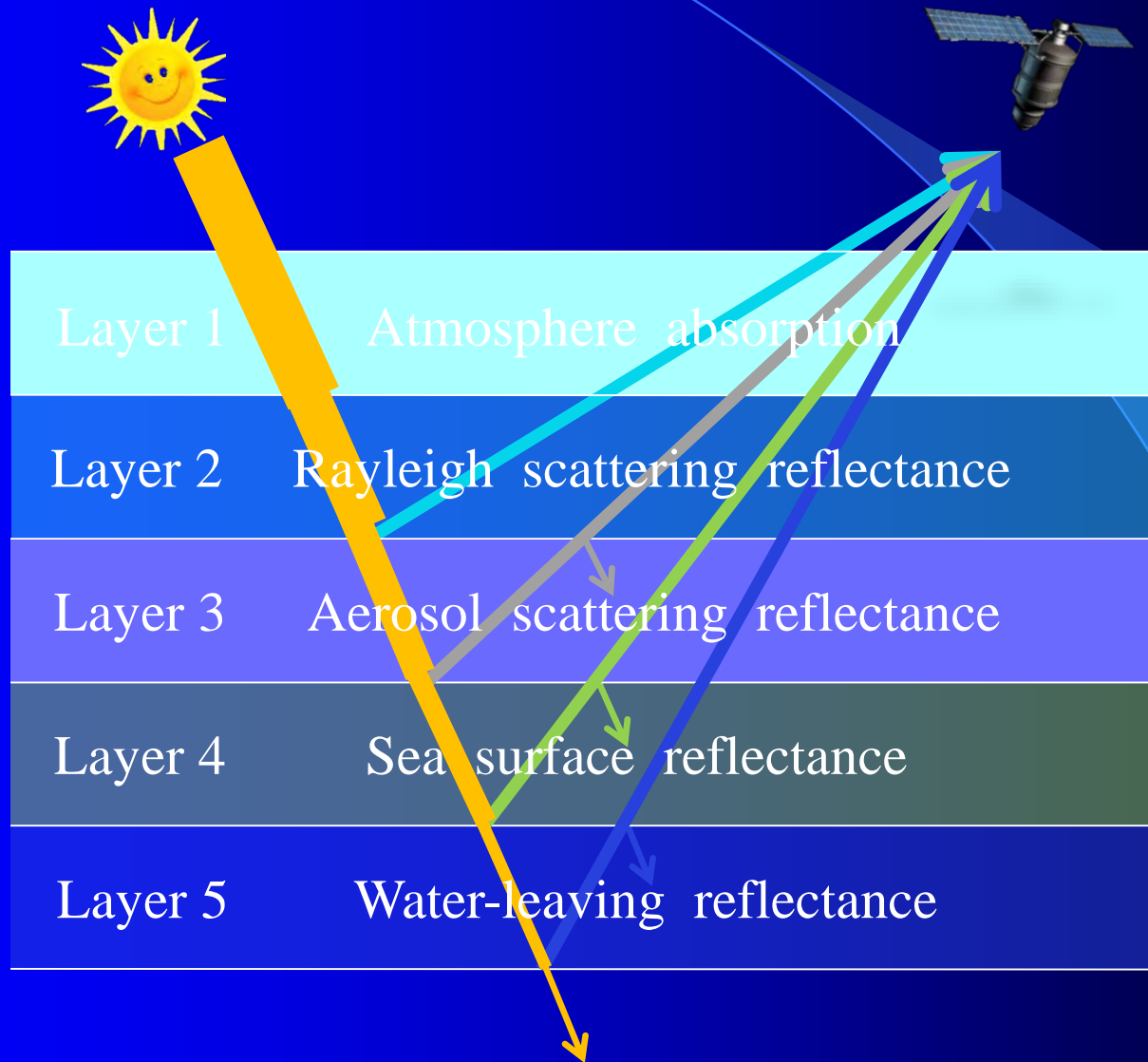
HY-1C satellite

A new ocean color satellite of China, **HY-1C** was launched in September, 2018.

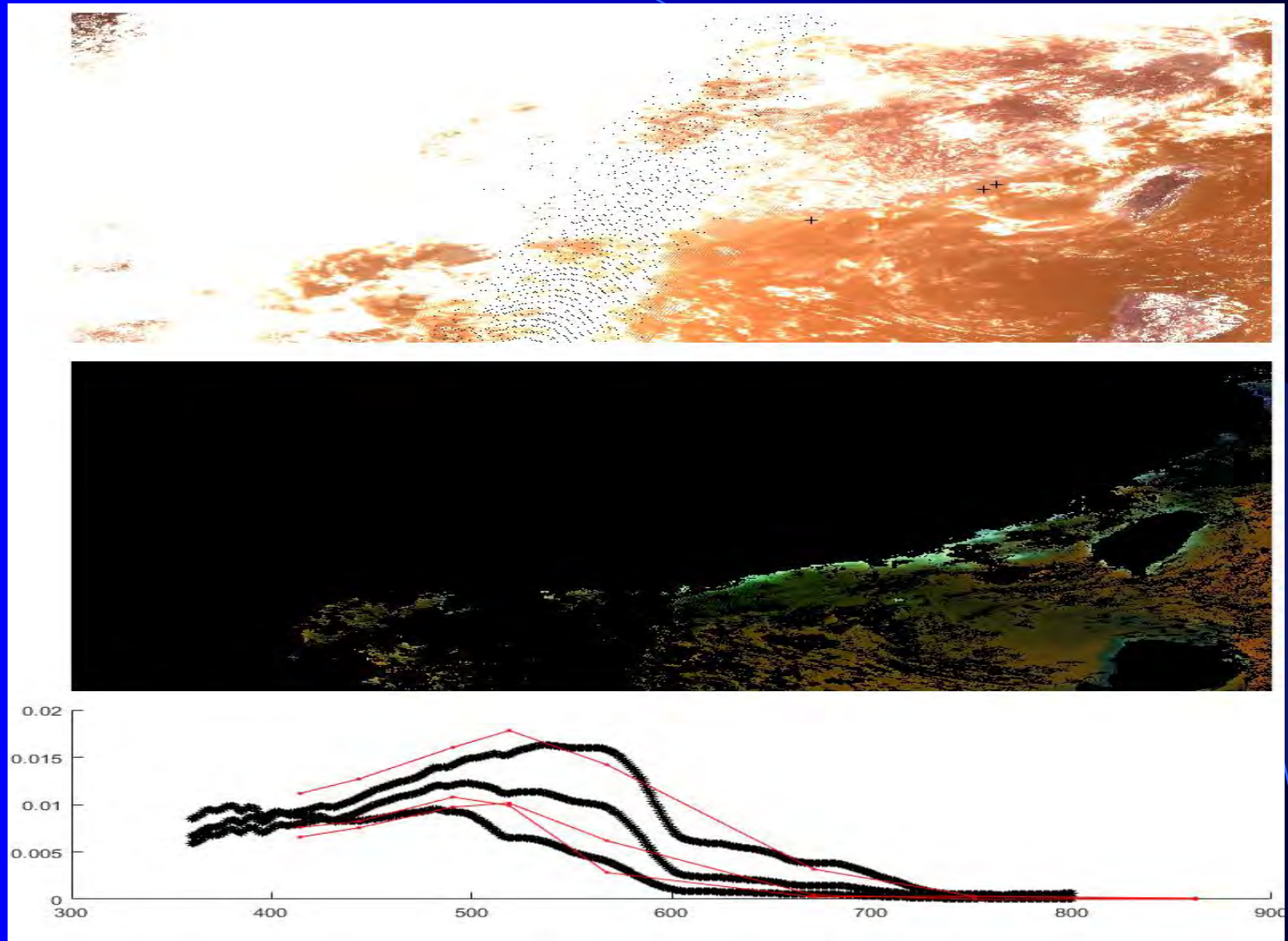
- 1. **COCTS**- Chinese Ocean Color and Temperature Scanner (Ten bands)
- 2. **CZI**- Coastal Zone Imager (4 bands CCD Camera)
- 3. Two UV bands Camera
- 4. On board calibration system



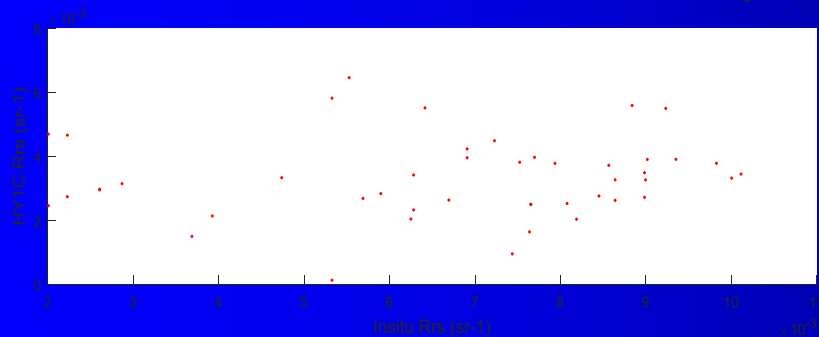
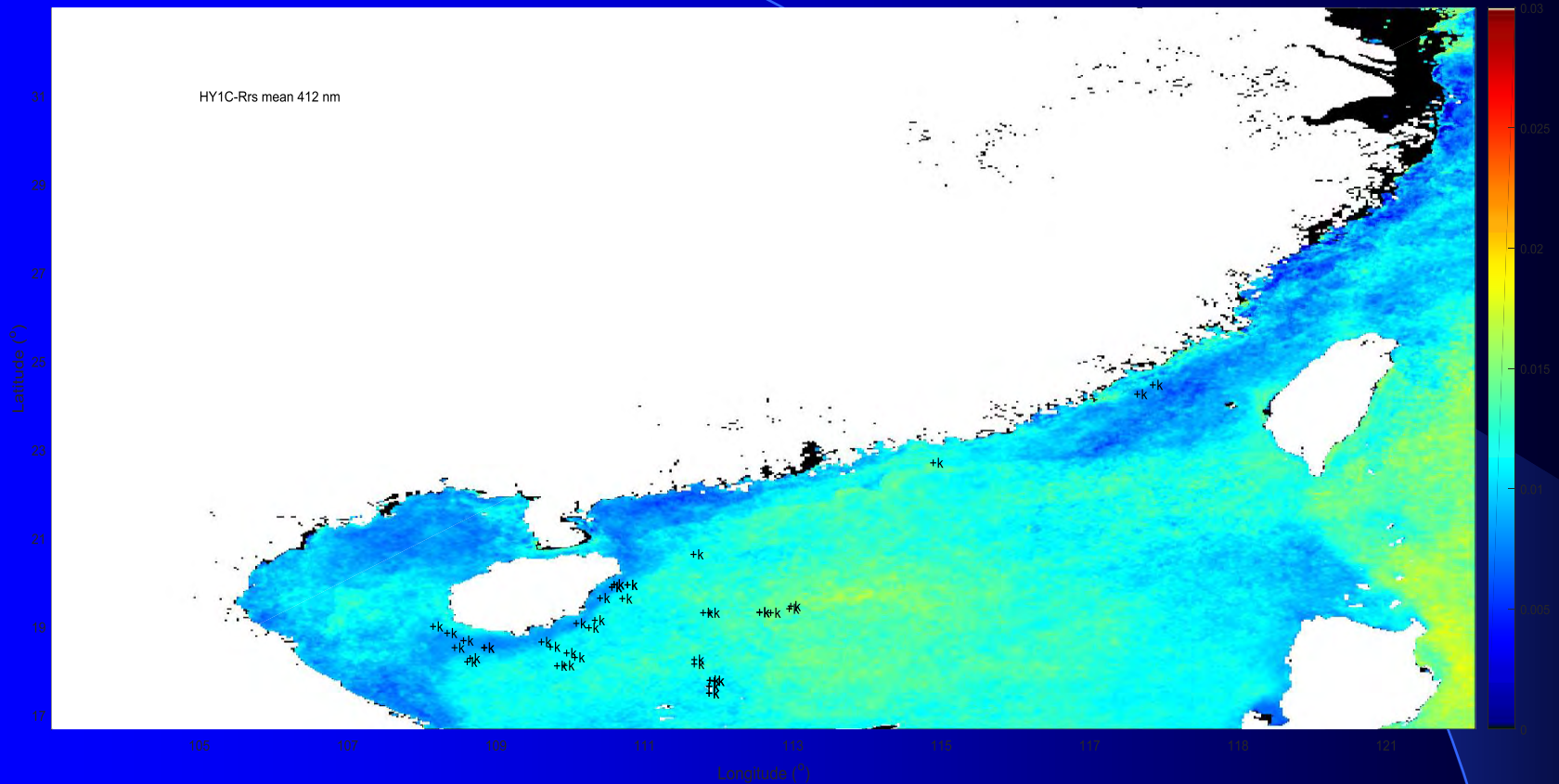
The atmospheric correction algorithm for HY-1C data processing system



The result of atmospheric correction of HY-1C



Validation of HY-1C Rrs



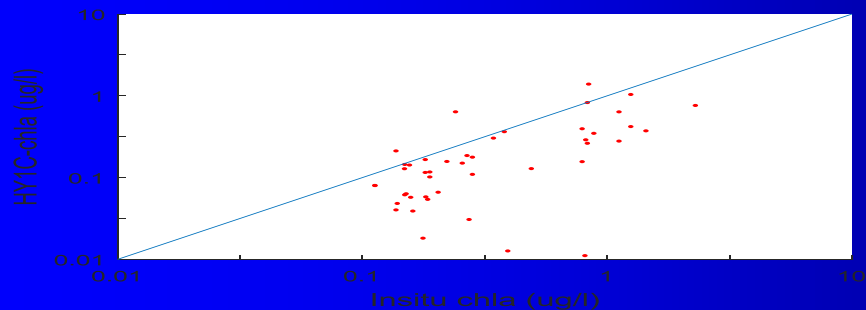
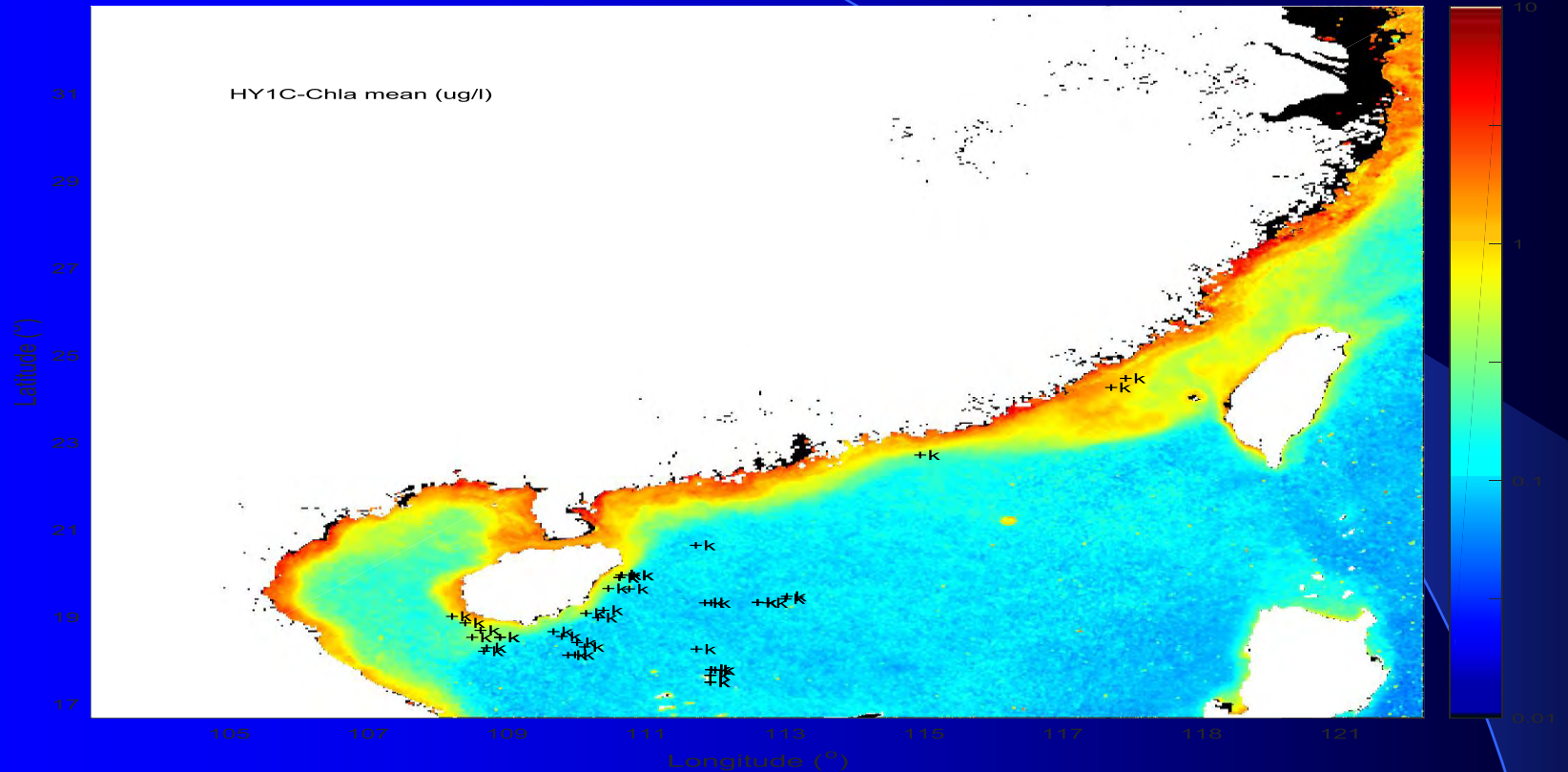
N=46

MRE=-46.0487%

RMSE=0.0042358

R2=0.089328

Validation of HY-1C Chla

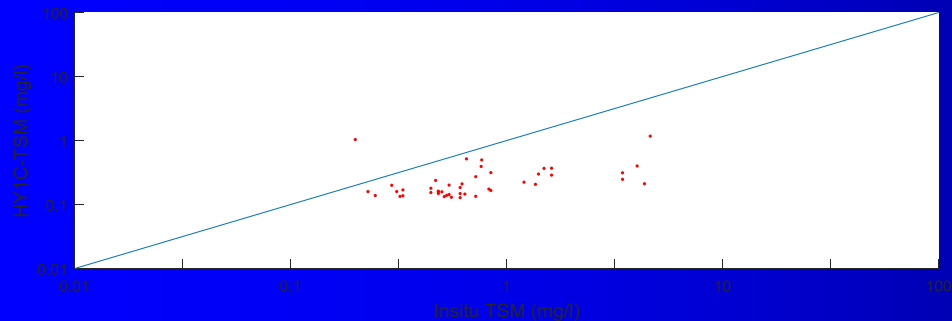
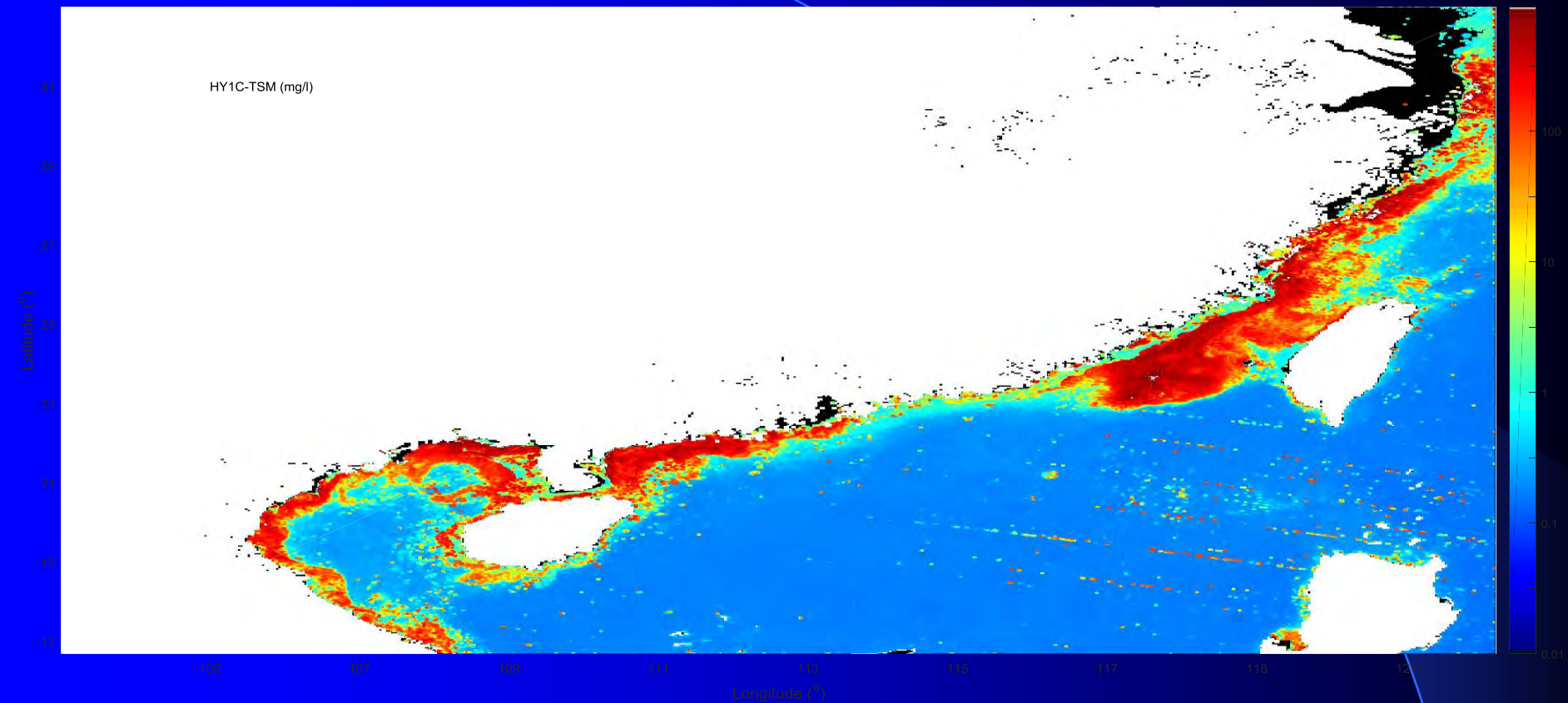


MRE=25.3564%

RMSE=0.54214

R2=0.58473

Validation of HY-1C TSM



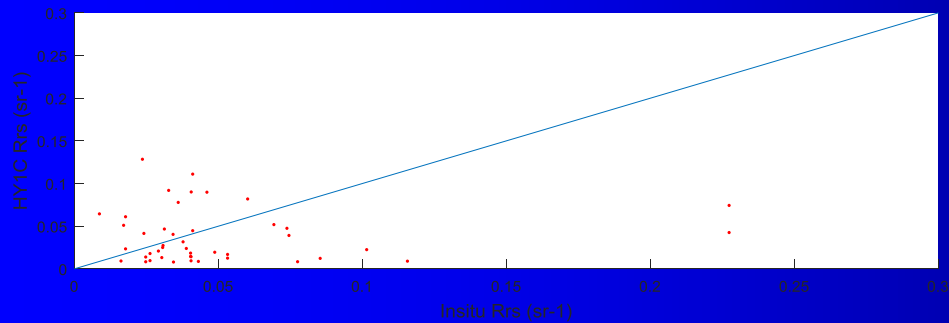
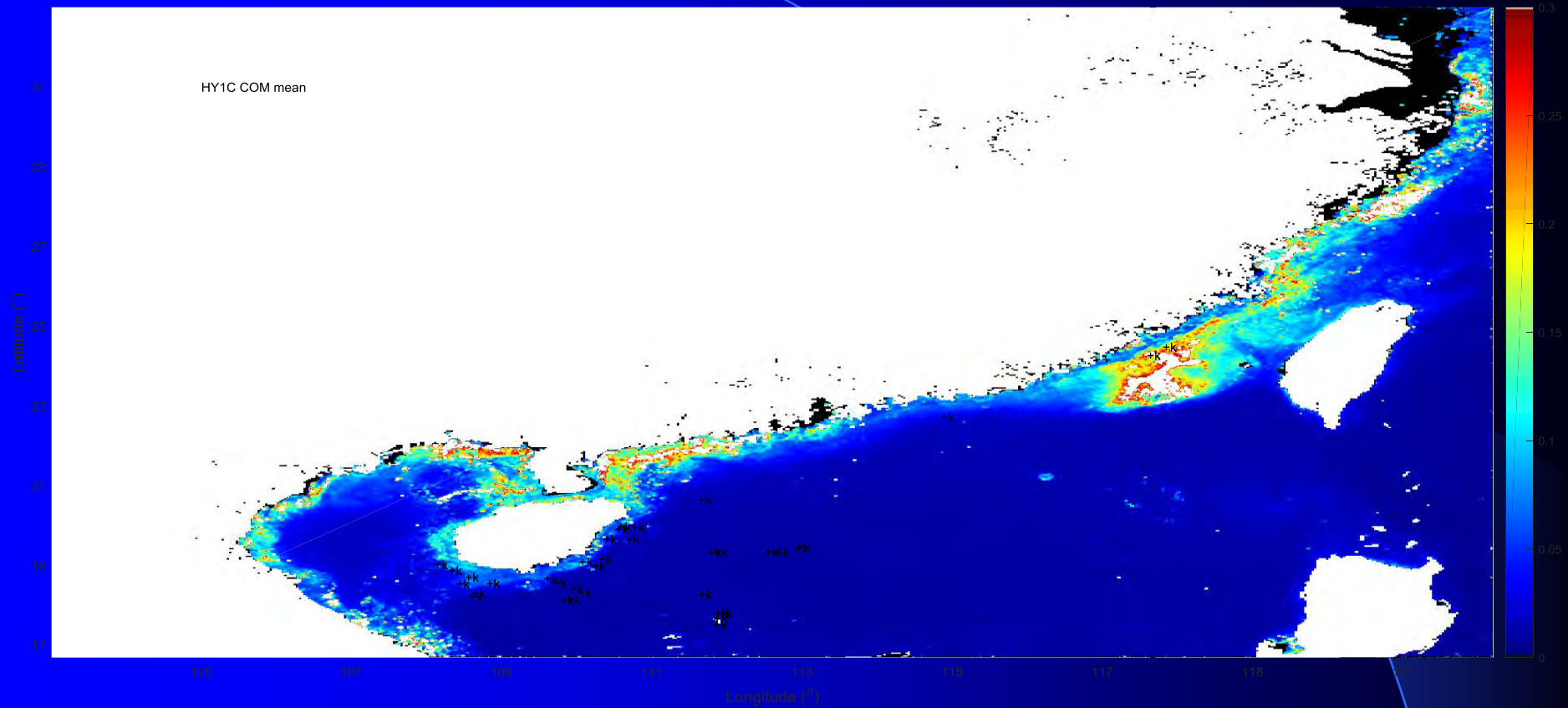
N=45

MRE=42.2616%

RMSE=0.7798

R2=0.27518

Validation of HY-1C CDOM



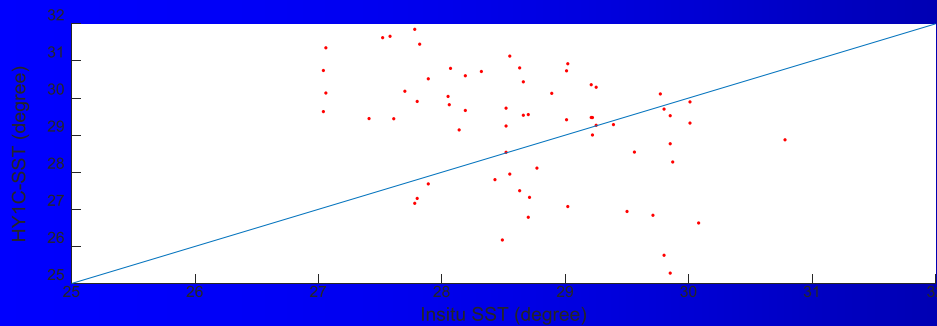
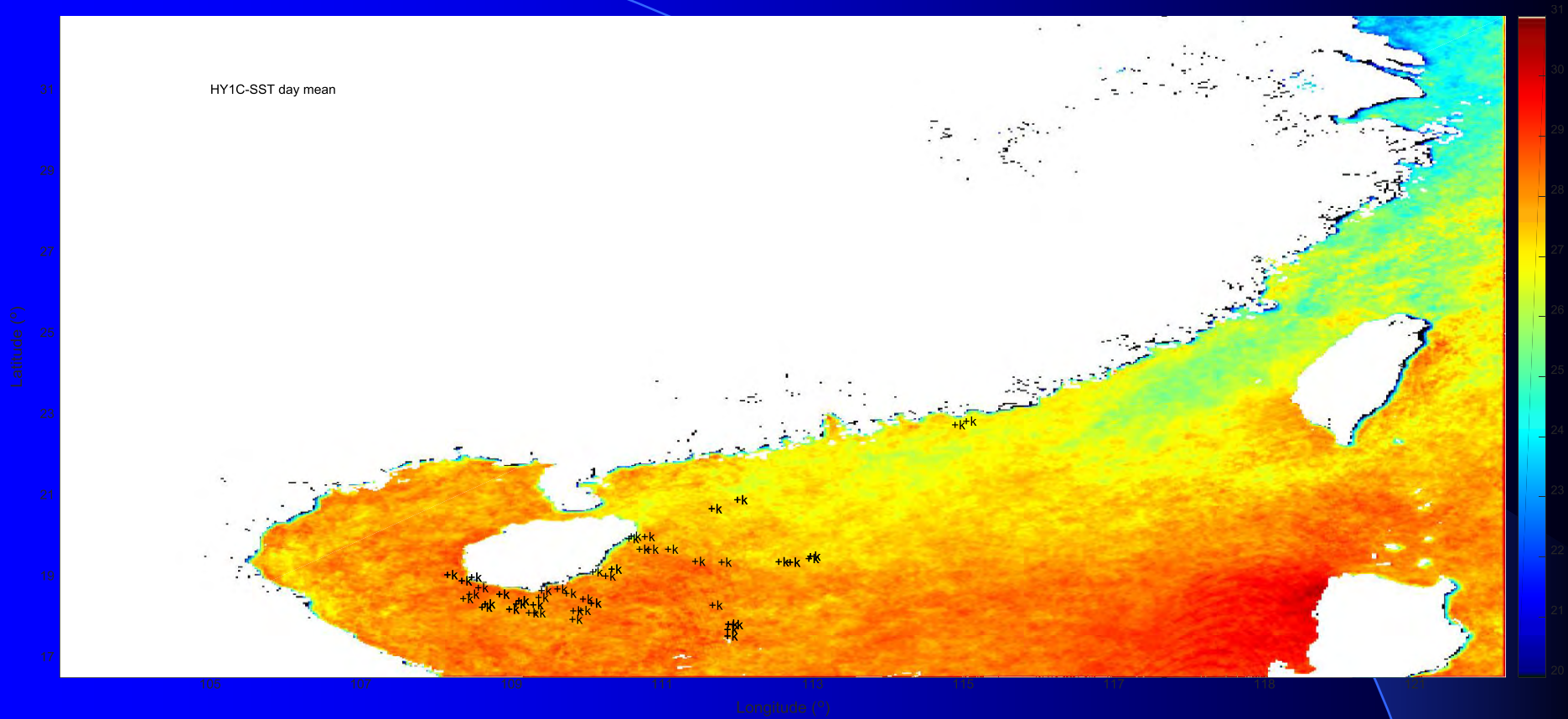
N=45

MRE=-36.9476%

RMSE=0.46775

R2=-0.061982

Validation of HY-1C SST in Day time



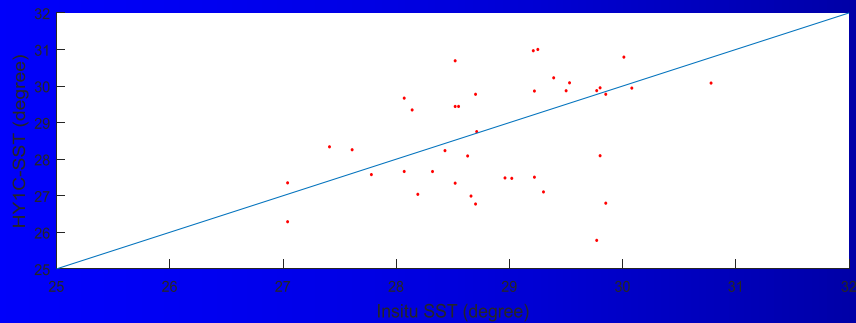
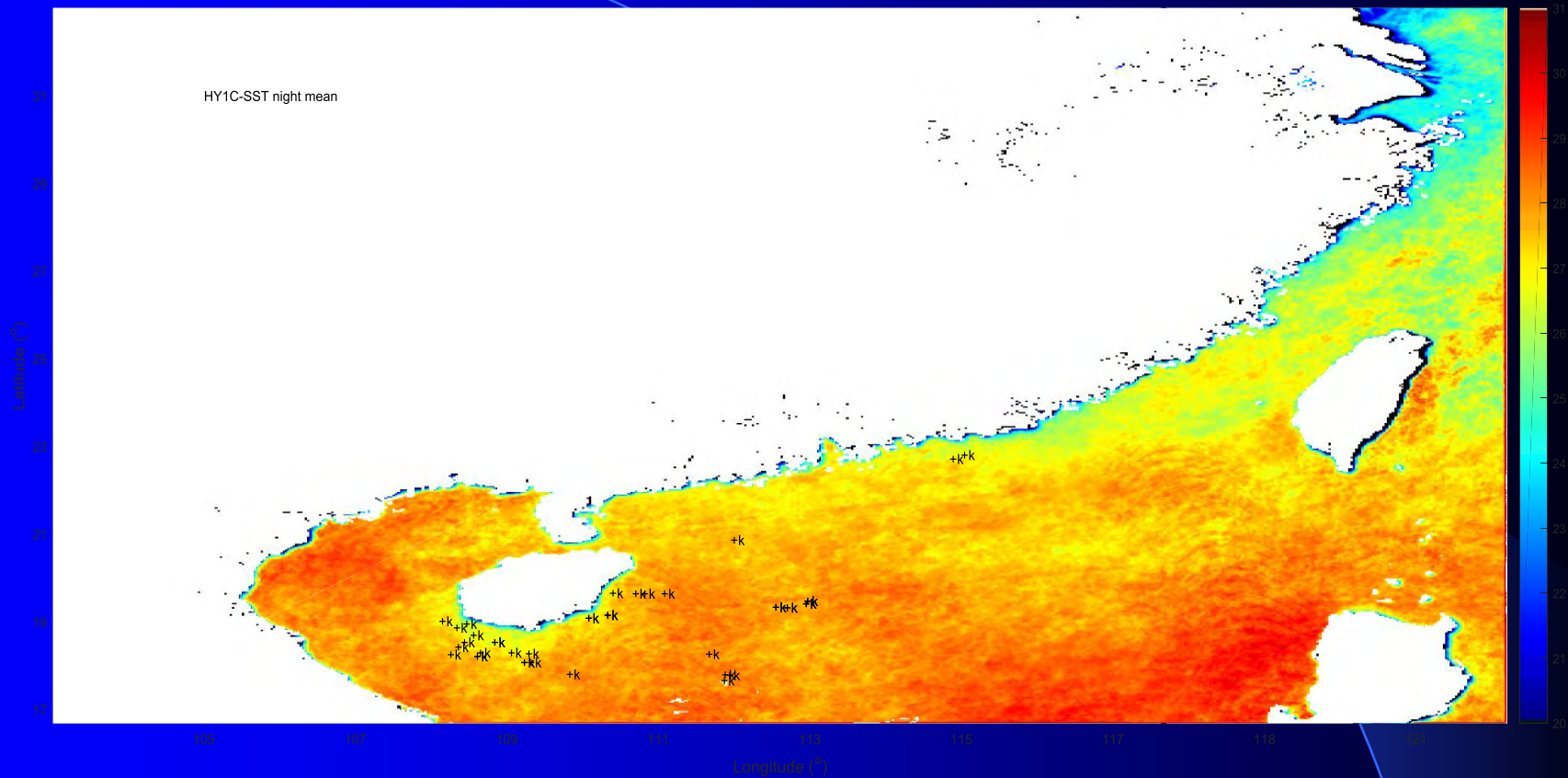
N=71

MRE=0.49918⁰

RMSE=8.6775

R2=-0.06164

Validation of HY-1C SST in Night time



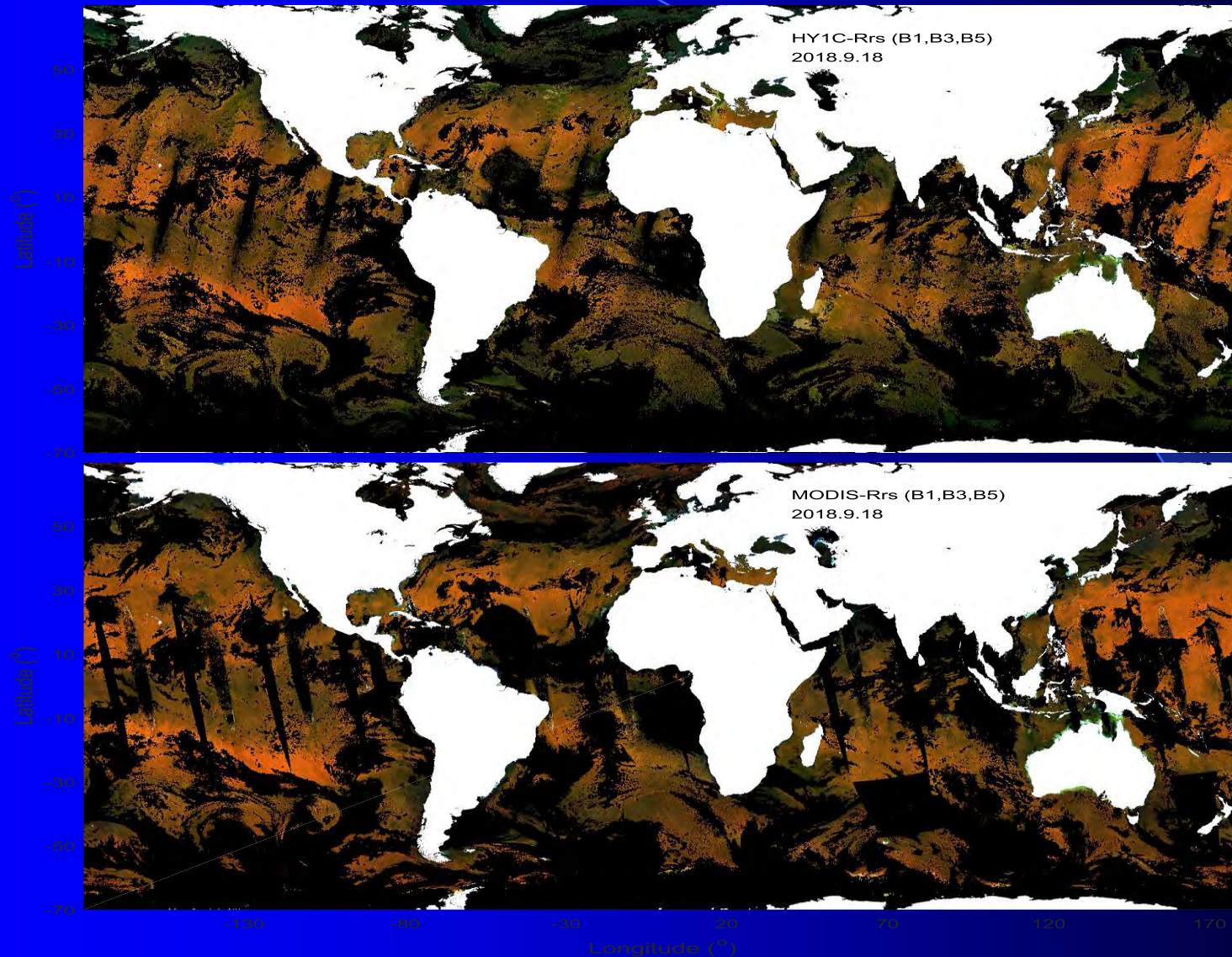
N=41

MRE=-0.43137⁰

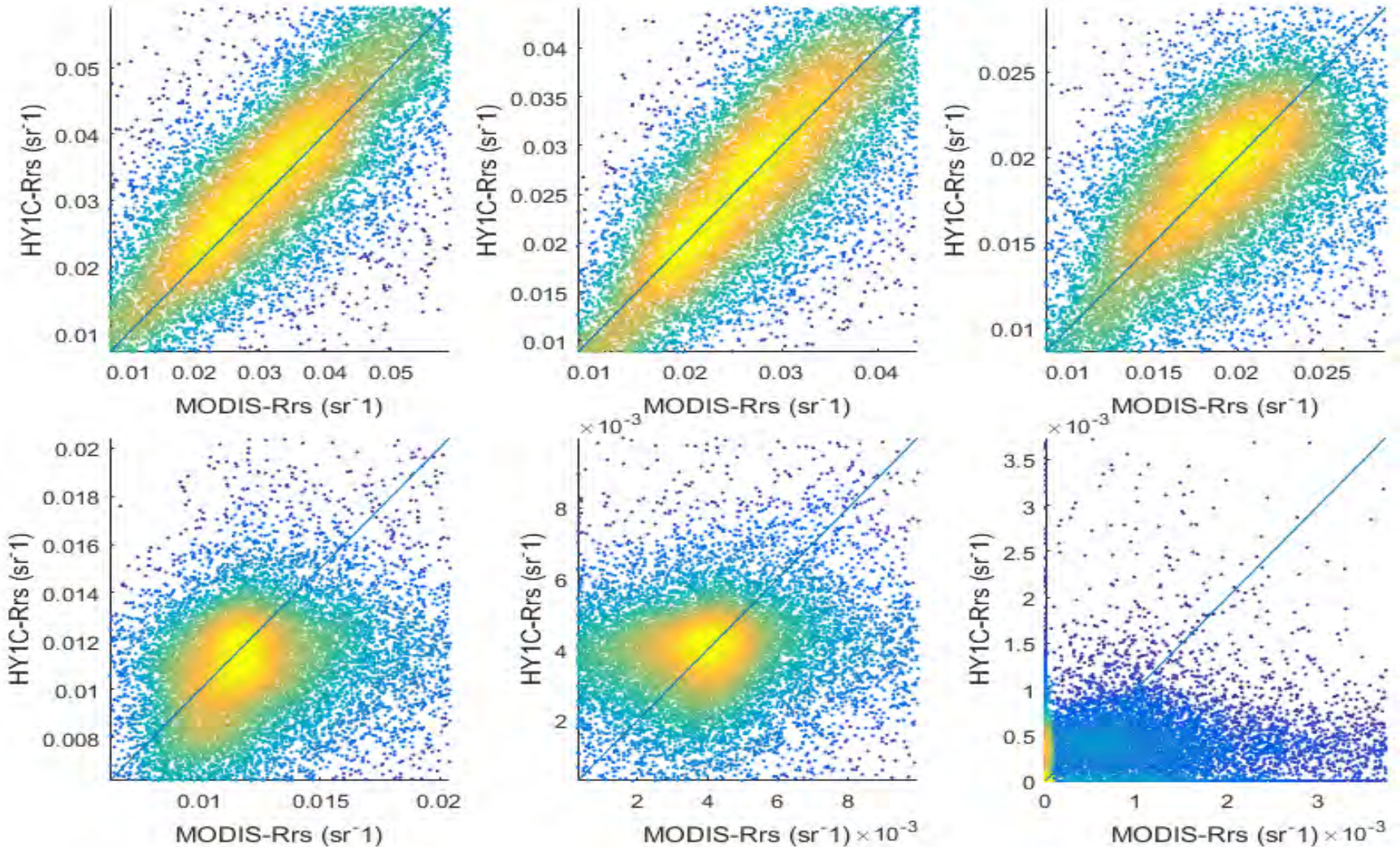
RMSE=1.6735

R2=0.39863

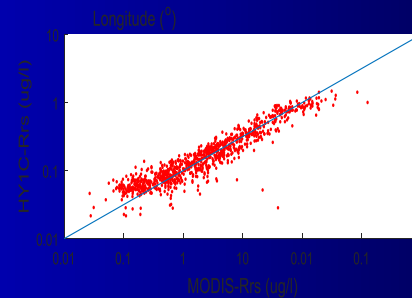
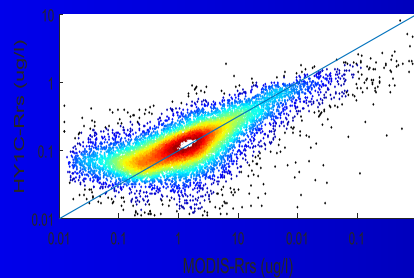
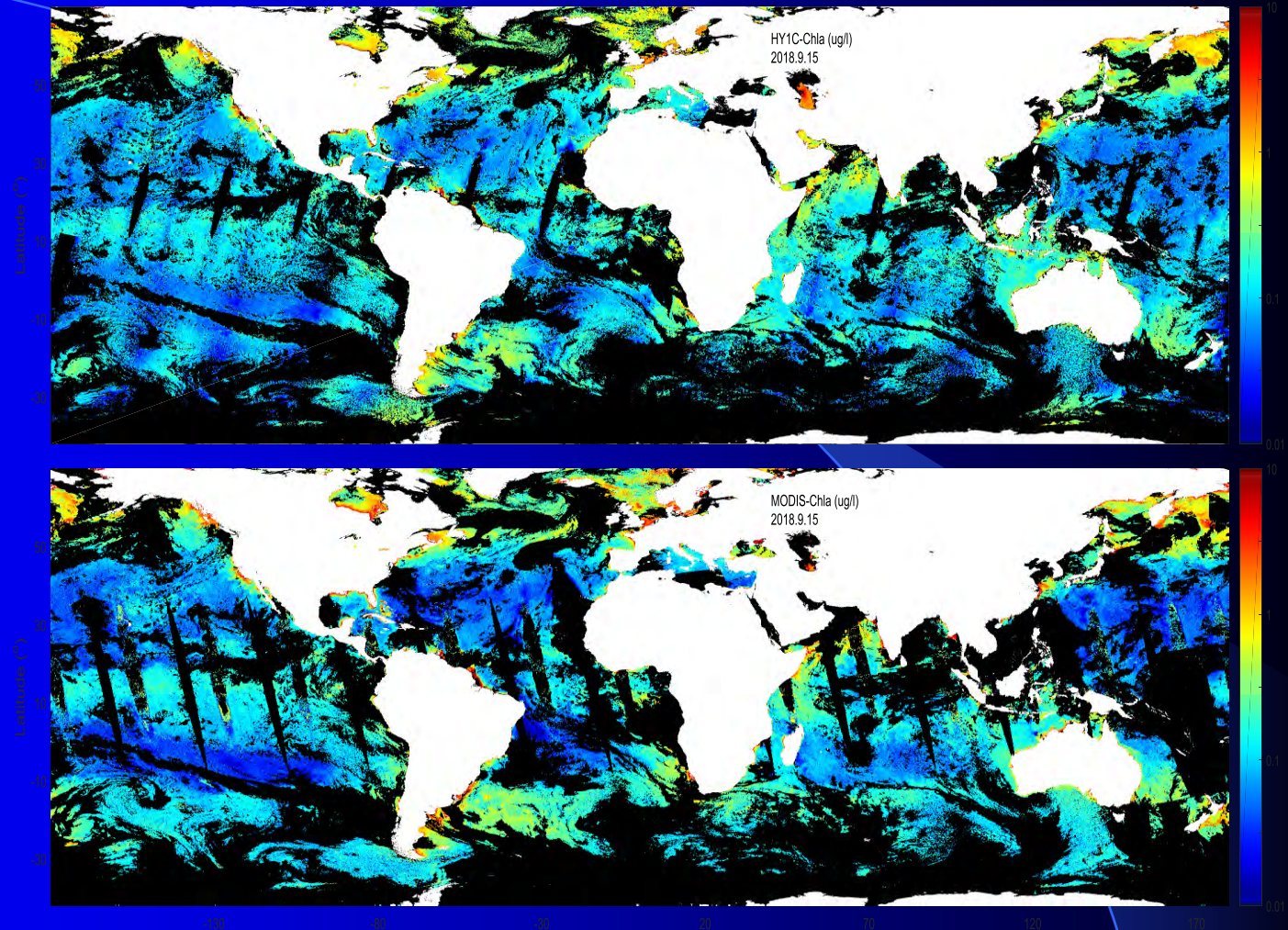
Comparing the Rrs with MODIS



Comparing the Rrs with MODIS



Chlorophylla concentraton 2018.9.15

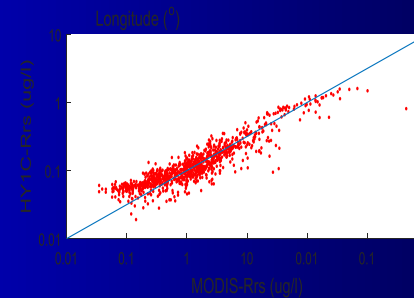
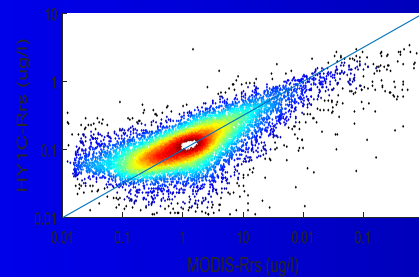
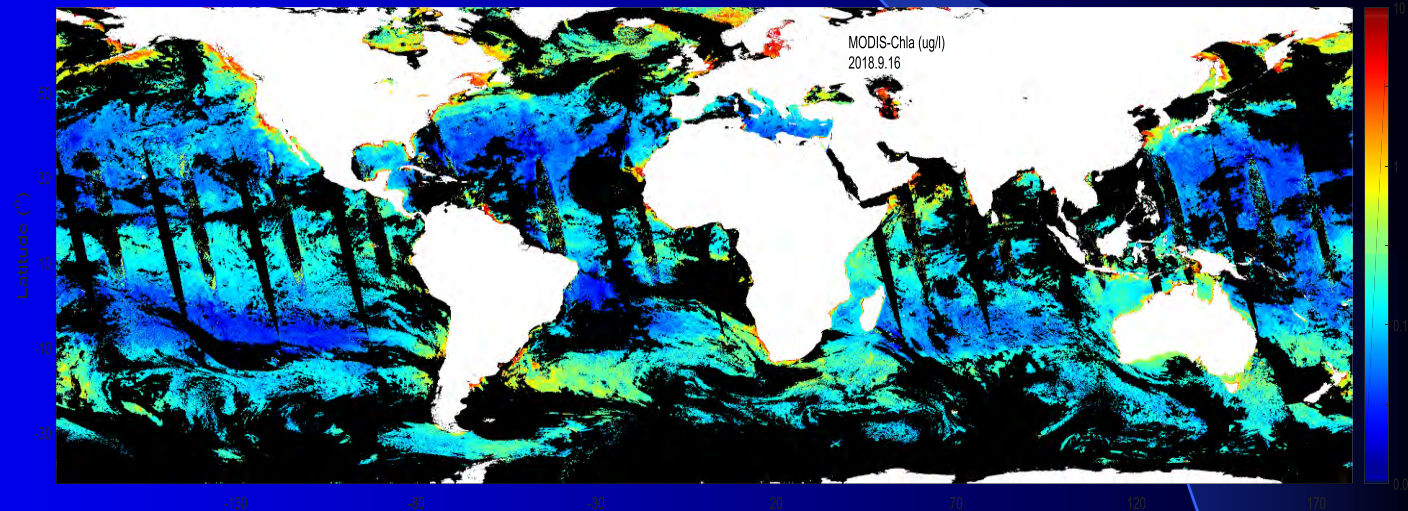
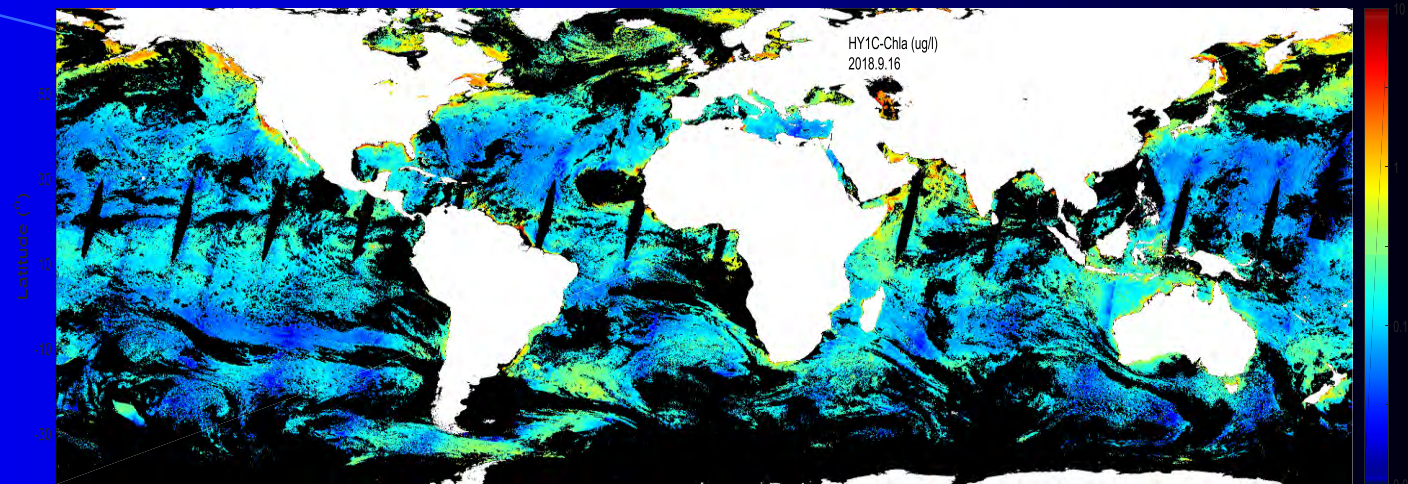


MRE=-3.3478%

RMSE=0.021065

R2=0.93495

Chlorophylla concentraton 2018.9.16



MRE=3.0179%

RMSE=0.023562

R2=0.9051

谢谢!

Thanks for your attention!