

# Evaluation of the FY and HY sensors performance for SST observations

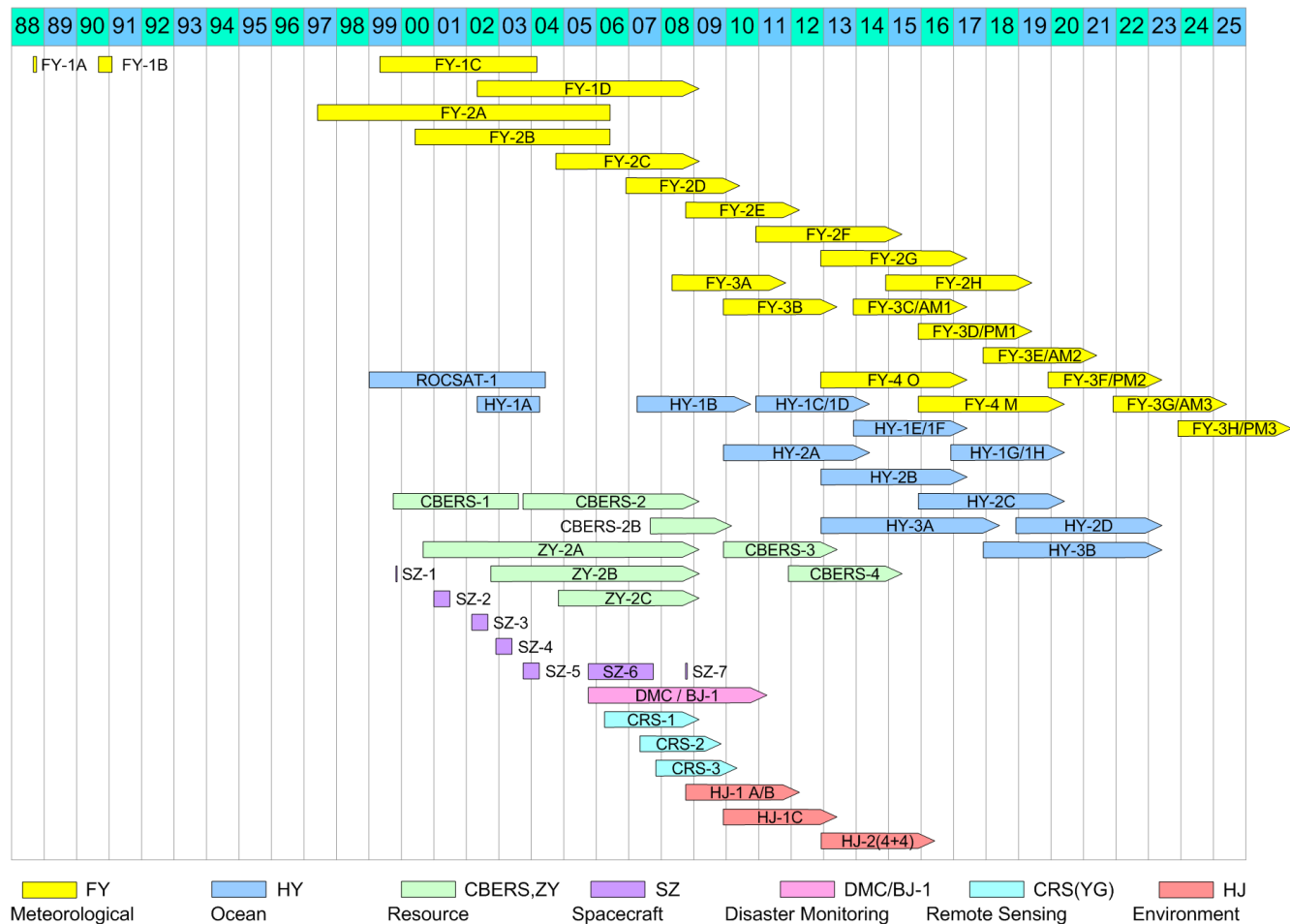
Lei Guan, Hongyan Wang and Liqin Qu

Ocean Remote Sensing Institute  
Ocean University of China



2nd DRAGONESS Annual Meeting, Qingdao, China, 8-9 Sept 2009

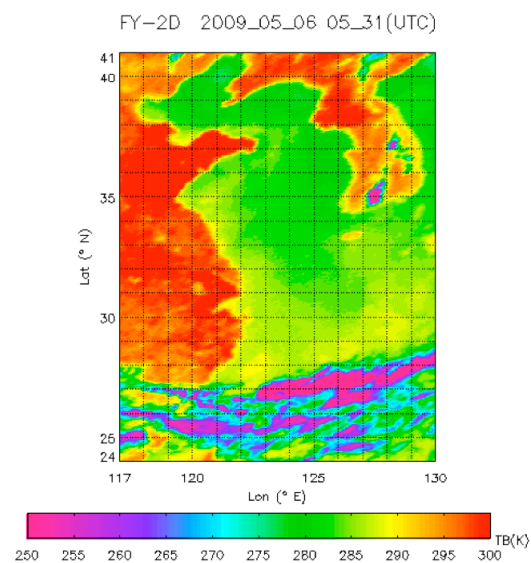
## CHINESE SPACEBORNE EARTH OBSERVING SYSTEM



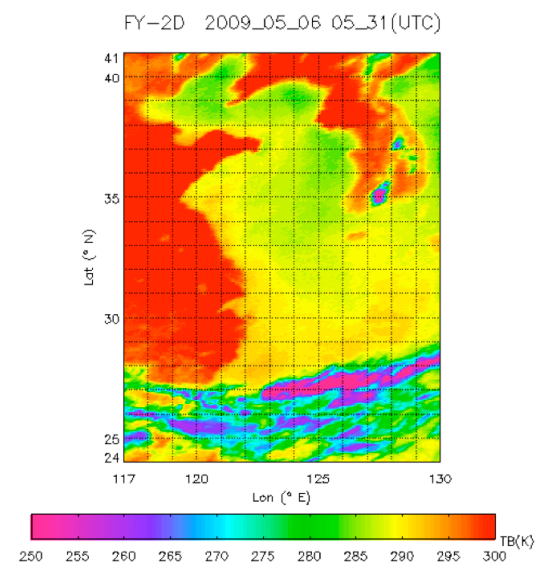
(HE et. al., 2008)



# Evaluation of FY-2D VISSR performance for SST observations

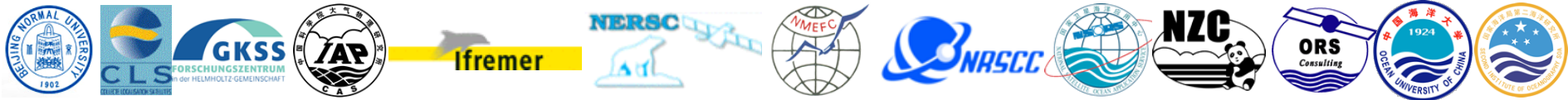


IR1 BT

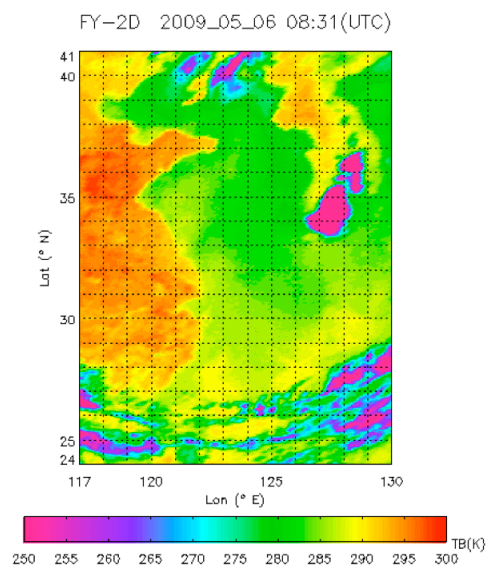


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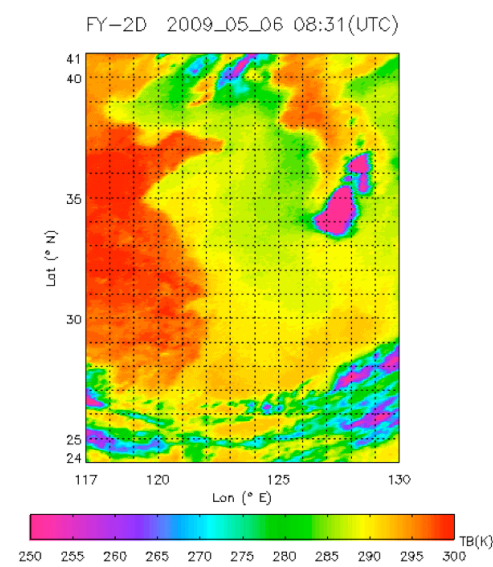




# Evaluation of FY-2D VISSR performance for SST observations



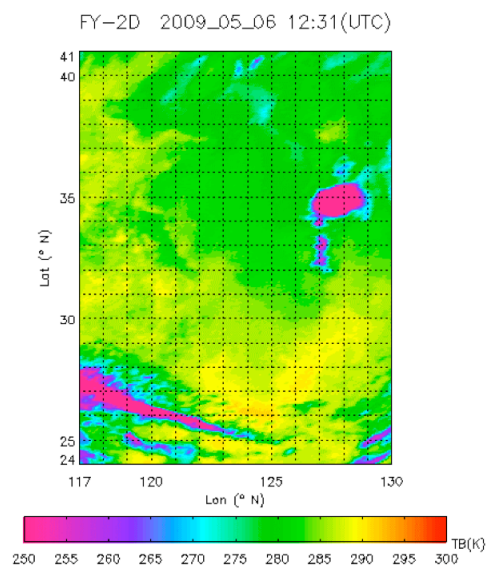
IR1 BT



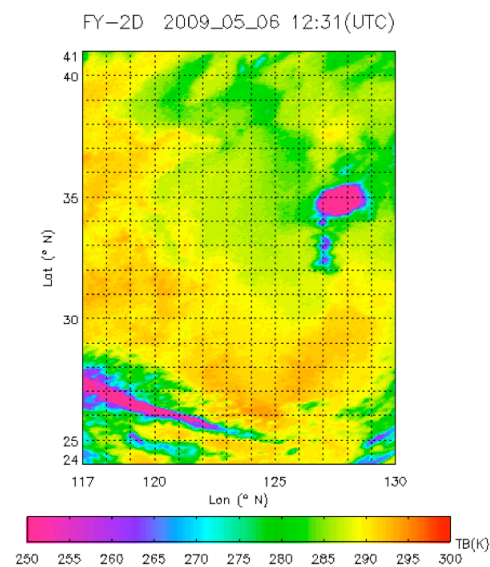
IR2 BT



# Evaluation of FY-2D VISSR performance for SST observations



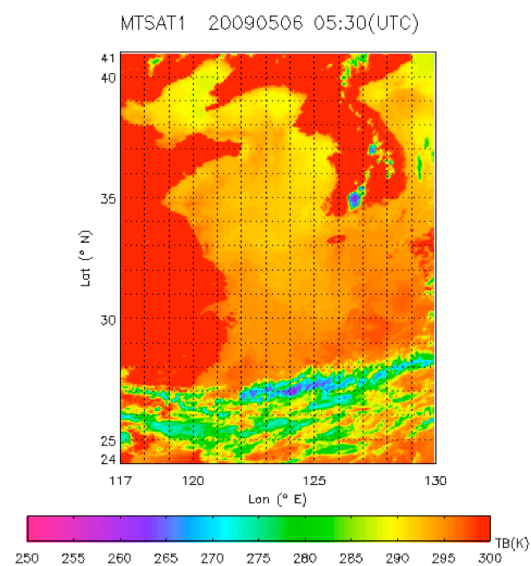
IR1 BT



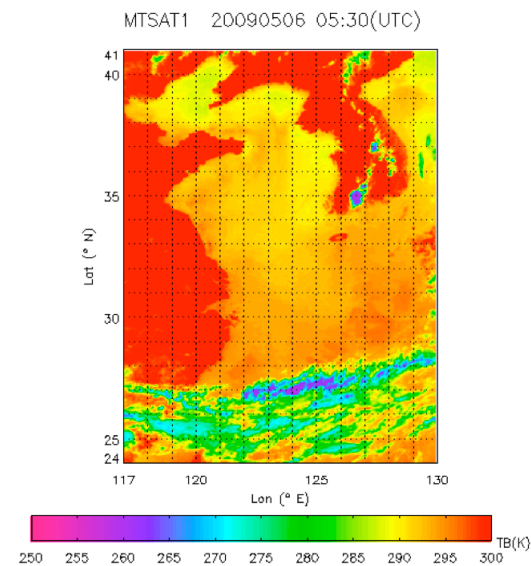
IR2 BT



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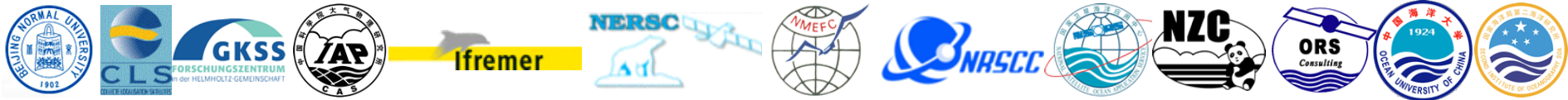
IR1 BT



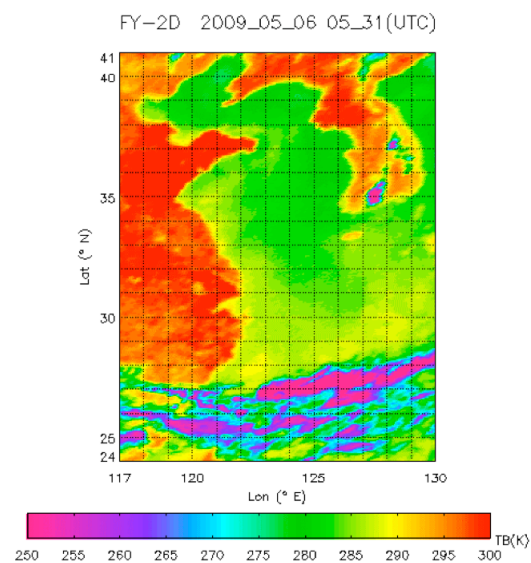
IR2 BT



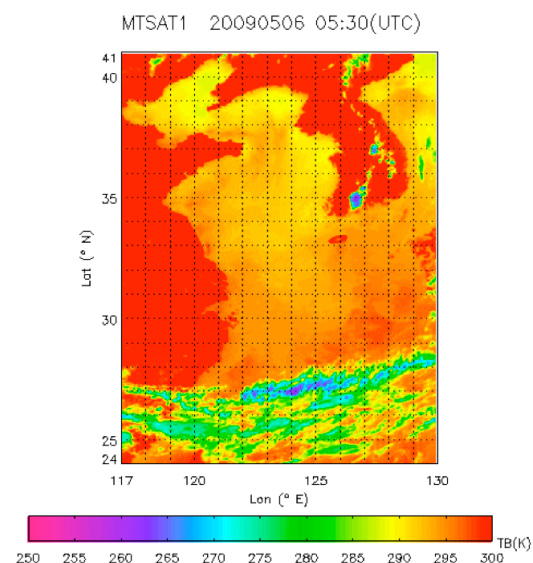




# Evaluation of FY-2D VISSR performance for SST observations

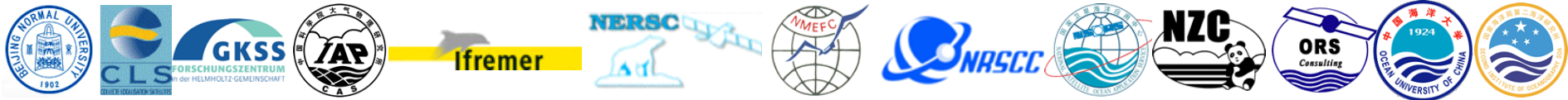


FY-2D IR1 BT

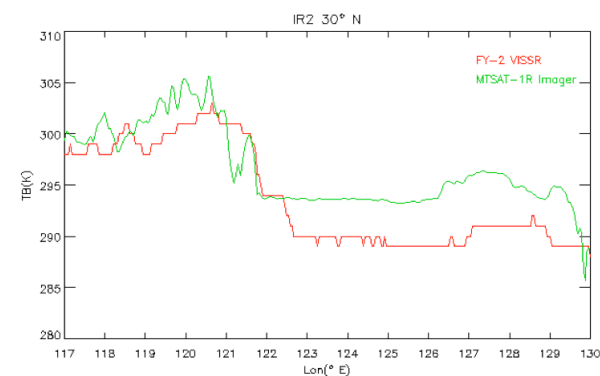
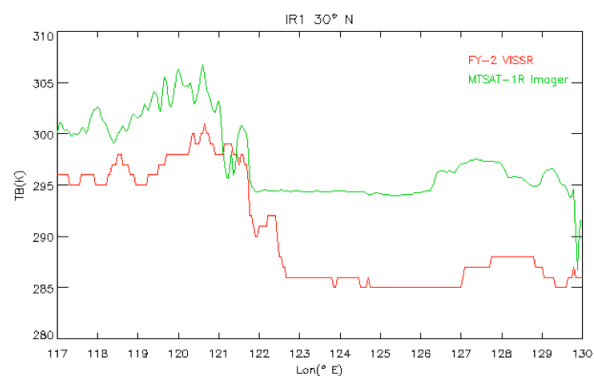


MTSAT-1R IR1 BT





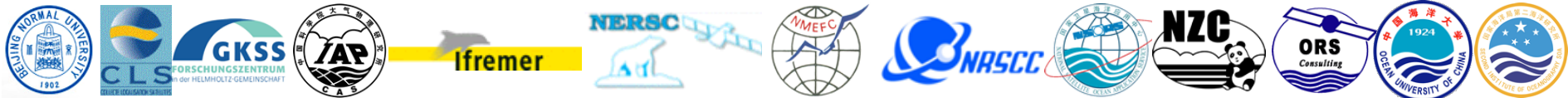
# Evaluation of FY-2D VISSR performance for SST observations



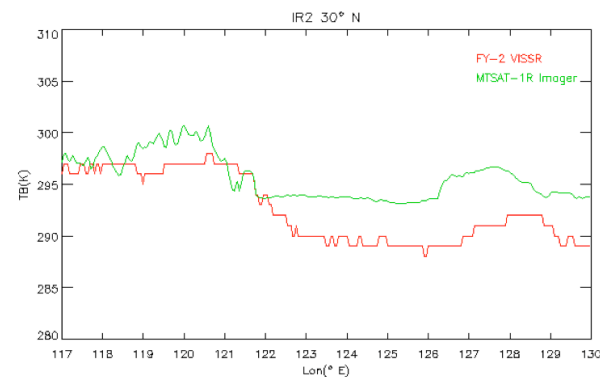
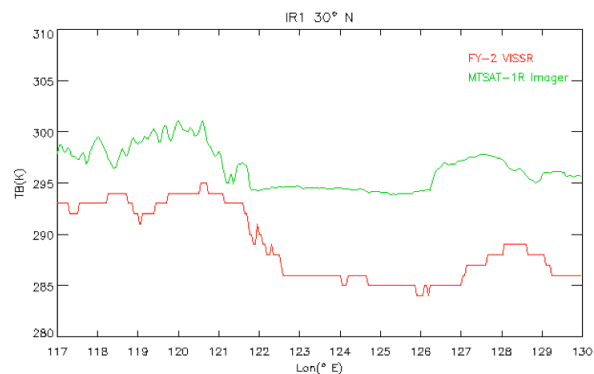
Comparison of FY-2D and MTSAT-1R BT  
6 May 2009 05:30 UTC





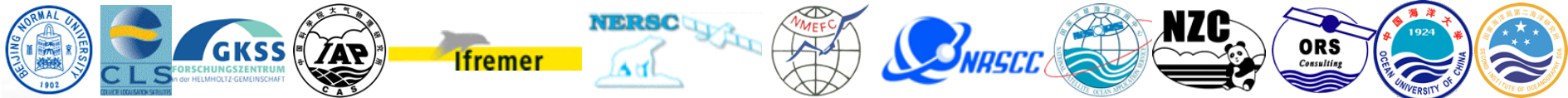


# Evaluation of FY-2D VISSR performance for SST observations

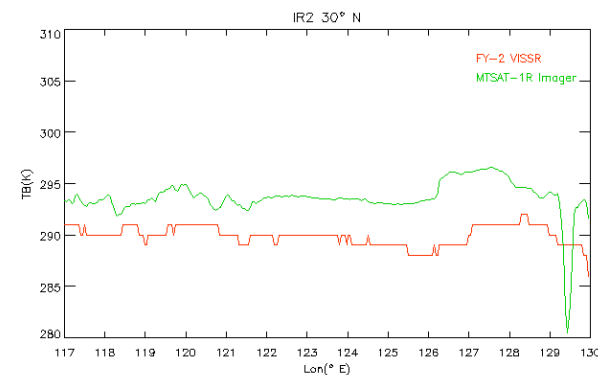
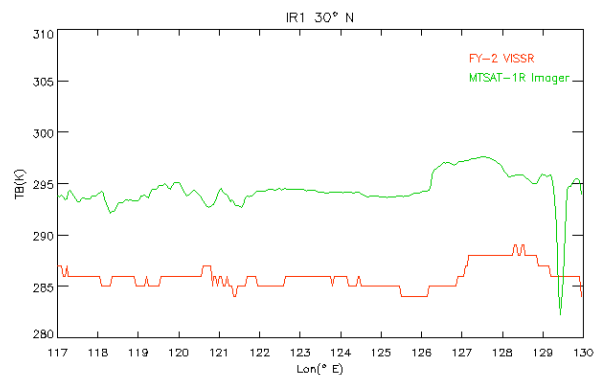


Comparison of FY-2D and MTSAT-1R BT  
6 May 2009 08:30 UTC



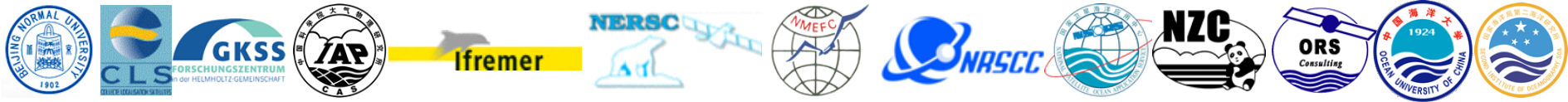


# Evaluation of FY-2D VISSR performance for SST observations



Comparison of FY-2D and MTSAT-1R BT  
6 May 2009 12:30 UTC

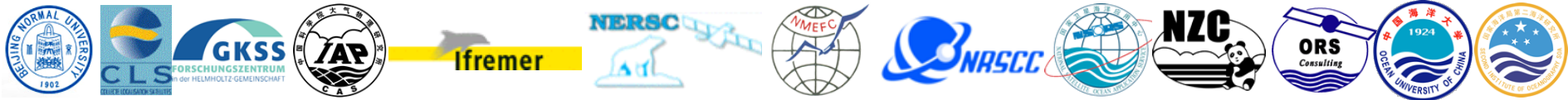




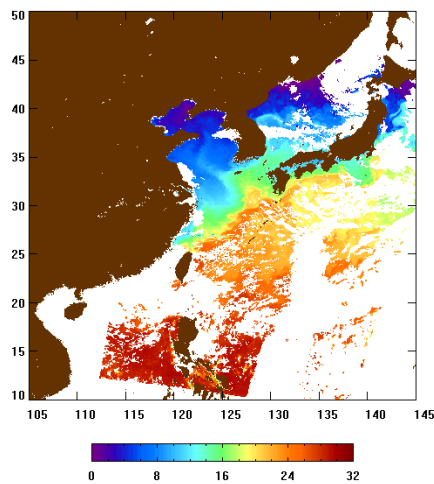
# Evaluation of FY-2D VISSR performance for SST observations

The results indicate that the IR1 and IR2 of FY-2D VISSR are not capable of retrieving valid SST products.

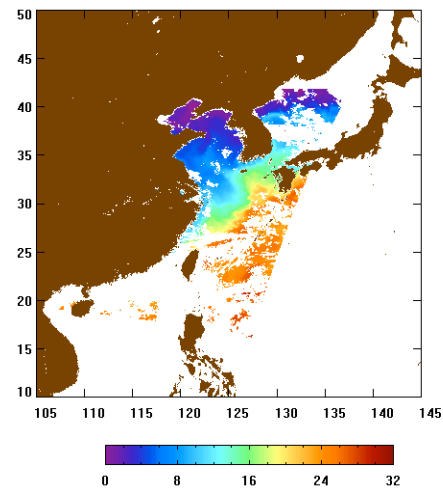




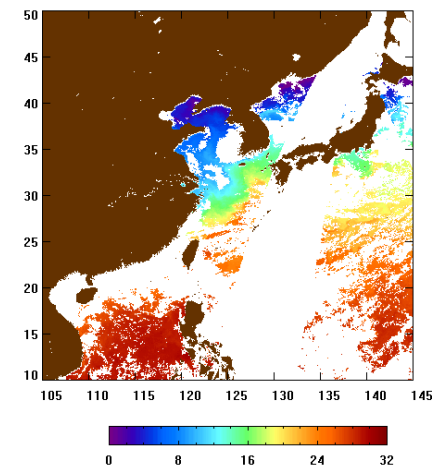
# Comparison of the SST products derived from HY-1B/COCTS, NOAA/AVHRR, and Terra/MODIS



NOAA-17 AVHRR



HY-1B COCTS

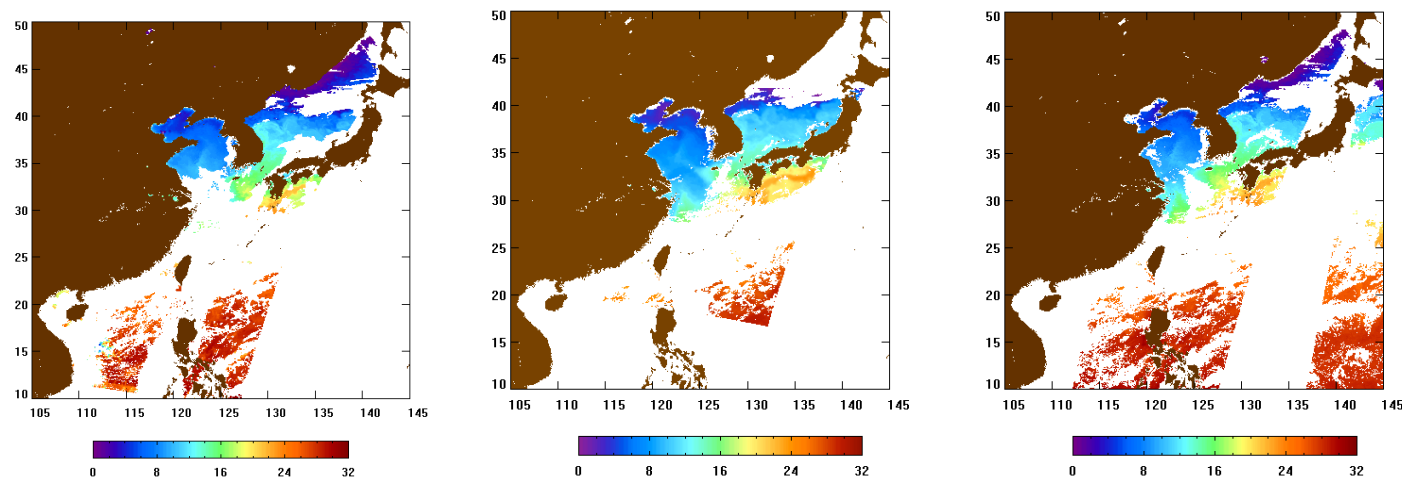


Terra MODIS

SST 26 March 2009



# Comparison of the SST products derived from HY-1B/COCTS, NOAA/AVHRR, and Terra/MODIS



NOAA-17 AVHRR

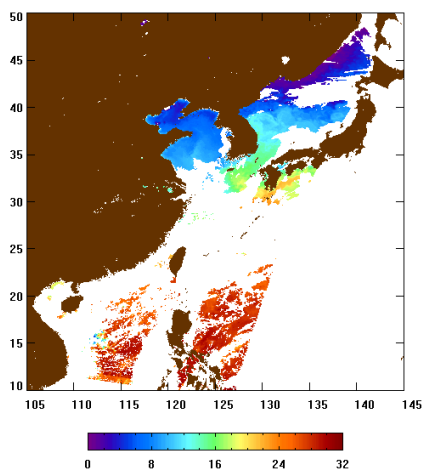
HY-1B COCTS

Terra MODIS

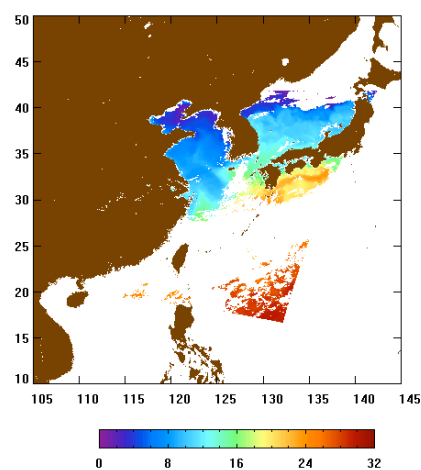
SST 6 April 2009



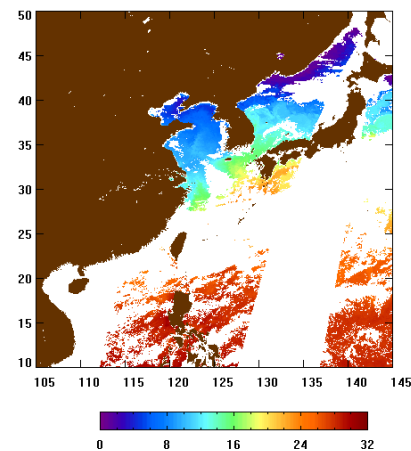
# Comparison of the SST products derived from HY-1B/COCTS, NOAA/AVHRR, and Terra/MODIS



NOAA-17 AVHRR



HY-1B COCTS

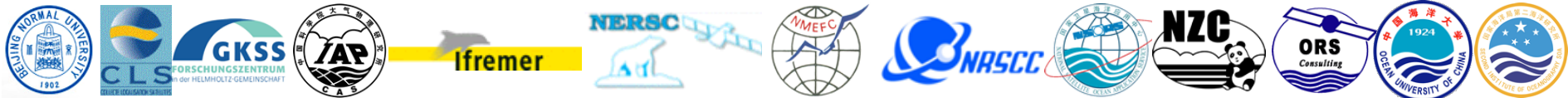


Terra MODIS

SST 29 April 2009



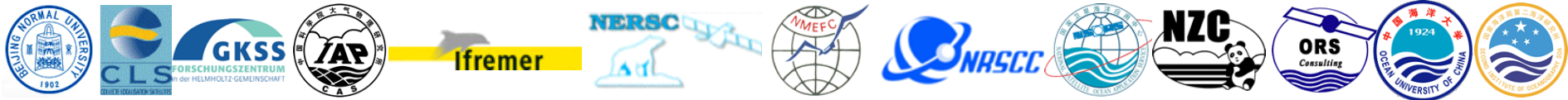




# Comparison of the SST products derived from HY-1B/COCTS, NOAA/AVHRR, and Terra/MODIS

Date	Sensor	Number	Bias	Std.Dev.
26/3/2009	AVHRR - MODIS	74	-0.46	0.33
	COCTS - MODIS	131	-1.02	0.68
	COCTS - AVHRR	145	-0.95	0.63
6/4/2009	AVHRR - MODIS	119	0.11	0.33
	COCTS - MODIS	188	-1.15	0.50
	COCTS - AVHRR	134	-1.16	0.74
29/4/2009	AVHRR - MODIS	118	-0.20	0.37
	COCTS - MODIS	118	-0.83	0.59
	COCTS - AVHRR	89	-1.18	0.51

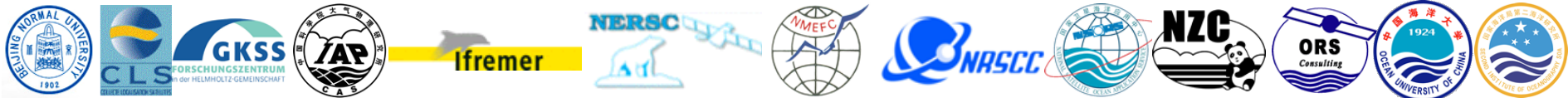




# Comparison of the SST products derived from HY-1B/COCTS, NOAA/AVHRR, and Terra/MODIS

The results show negative bias of COCTS SST around 1 K compared to MODIS and AVHRR products.





## Summary

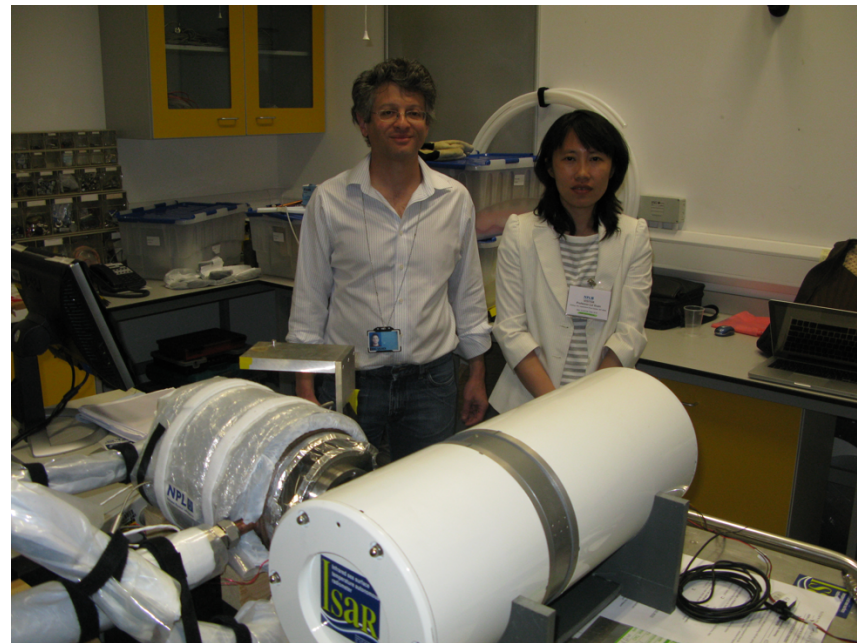
- The FY-2D and HY-1B data were evaluated. The IR1 and IR2 of FY-2D VISSR are not capable of retrieving valid SST products. The negative bias exists in COCTS SST compared to MODIS and AVHRR products.
- Investigations of FY-2E, FY-3A data for SST observations are ongoing.

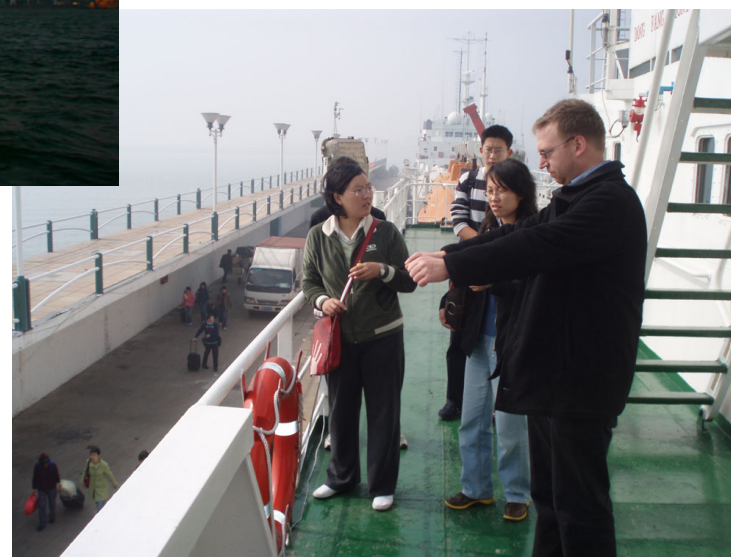
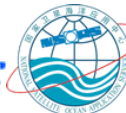
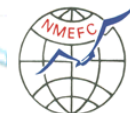
*Calibration*

*Validation*



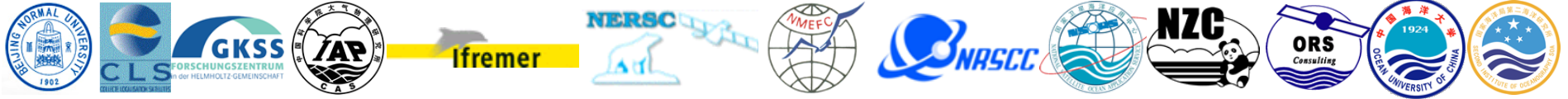
## CEOS comparison of Infrared radiometry in support of satellite calibration and validation for measuring sea surface temperature measurements





2nd DRAGONESS Annual Meeting, Qingdao, China, 8-9 Sept 2009





*Thank you*



2nd DRAGONESS Annual Meeting, Qingdao, China, 8-9 Sept 2009