

RTG Sea Surface Temperature Analysis

Robert Grumbine
Bert Katz

From March EE

Change	Why	Risk	Mitigation
GOES Retrievals	Improved Gulf Stream Analysis	Nil – tested in hand	NA
Normalization of 2dvar	Improved convergence	Nil – tested in hand	NA
Laplacean fill of land	Weaver is nuts. HRRR uses 0.5 land values	NWP dislikes this fiction vs. old fiction	Don't implement Implement
AMSR2 Retrievals	Improved cloudy area analysis	Does not actually improve	Don't implement
VIIRS retrievals	Improved resolution inputs, esp for lakes and near shore	Does not actually improve Data volume cannot be tolerated in operations	Don't implement

SST Analysis Scores:

Region	AMSR2	GOES	VIIRS			
	Bias	RMS	RMS	Bias	RMS	Bias
ET NH	147-143	145-151	69-75	77-67	52-4	11-45
Tropics	123-155	139-143	83-57	43-100	56-1	17-40
ET SH	172-119	211-82	54-91	72-69	47-10	8-49
N Atl	160-145	152-131	91-54	98-46	50-7	22-35
NW Atl	175-121	149-149	88-57	106-39	43-14	32-25

Suggestions:

- ❑ On this implementation:
 - ❑ GOES
 - ❑ Normalization
 - ❑ Laplacean landfilling of temperatures
- ❑ On next implementation(s):
 - ❑ AMSR2 (wins, no losses; data flow concern a.t.m.)
 - ❑ VIIRS (bias correction?!)

Operations Concerns

- .Run time increases by ~2 minutes (user queues)
- .No change in distributed output formats or volumes