

0.1 1992-01

1. Problems

- (a) No issues running
- (b) Archived

2. Results

(a) Level 1

i. - Map

A. - Max = 18.40-m, Mean = 4.79-m, U10 = 37.04-m/s

B. - Maximum wave height in Northeast corner.

ii. - Validation

A. - Three good size storms came through during the month with wave heights exceeding 6-m. The similar trend is continued with under-estimation of peak wave heights, specifically with the northern buoy locations (except for an over-estimation at 44011).

(b) Level 2

i. - Map

A. - Max = 9.74-m, Mean = 3.76-m, U10 = 24.96-m/s

ii. - Validation

A. - Similar to level 1

(c) Level 3N

i. - Map

A. - Max = 8.87-m, Mean = 2.78-m, U10 = 21.52-m/s

ii. - Validation

A. - 44005 - negative bias

B. - 44007 - pretty good fit, some slight issues with wave attenuation on first peak

C. - 44011 - over-estimation of first peak, negative bias for rest of month

D. - 44013 - wave attenuation issue at first peak

(d) Level 3C

- i. - Map
 - A. - Max = 8.15-m, Mean = 2.53-m, U10 = 21.69-m/s
 - ii. - Validation
 - A. - 44009 - good fit
 - B. - 44012 - under-estimation of peak on 4th by 3-m
 - C. - 44014 - negative bias
- (e) Level 3S1
- i. - Map
 - A. - Max = 6.75-m, Mean = 2.49-m, U10 = 19.74-m/s
 - ii. - Validation
 - A. - 41002 - not enough data
 - B. - 41008 - positive bias early, negative bias later
 - C. - 41009 - pretty good fit
 - D. - 41010 - good fit
- (f) Level 3S2
- i. - Map
 - A. - Max = 4.71-m, Mean = 2.09-m, U10 = 16.63-m/s
 - ii. - Validation
 - A. - 41009 - good fit

0.2 1992-02

1. Problems
 - (a) No issues running
 - (b) Archived
2. Results
 - (a) Level 1
 - i. - Map
 - A. - Max = 13.94-m, Mean = 5.90-m, U10 = 27.94-m/s
 - ii. - Validation

A. - An active wave month for the Northeast with some peaks over 5-m. The overall fit for the month looks pretty good. The peaks are captured well by the model for the month.

(b) Level 2

i. - Map

A. - Max = 8.74-m, Mean = 3.73-m, U10 = 25.80-m/s

ii. - Validation

A. - Similar to level 1

(c) Level 3N

i. - Map

A. - Max = 6.28-m, Mean = 2.71-m, U10 = 22.97-m/s

ii. - Validation

A. - 44005 - negative bias

B. - 44011 - negative bias, but better than 44005

C. - 44013 - pretty good fit

(d) Level 3C

i. - Map

A. - Max = 5.52-m, Mean = 2.38-m, U10 = 21.01-m/s

ii. - Validation

A. - 44009 - good fit

B. - 44012 - good fit but some slight phase issues

C. - 44014 - good fit

(e) Level 3S1

i. - Map

A. - Max = 5.95-m, Mean = 2.34-m, U10 = 17.58-m/s

ii. - Validation

A. - 41008 - phase issues

B. - 41009 - phase issues, waves under 3-m

(f) Level 3S2

i. - Map

A. - Max = 5.60-m, Mean = 2.17-m, U10 = 18.42-m/s

ii. - Validation

A. - 41009 - phase issues, low waves

0.3 1992-03

1. Problems

- (a) No issues running
- (b) Archived

2. Results

(a) Level 1

i. - Map

A. - Max = 17.89-m, Mean = 5.09-m, U10 = 29.21-m/s

B. - Maximum wave height in Northeast corner

ii. - Validation

A. - A couple of good events during the month. The largest event with wave heights $\gtrsim 6\text{-m}$ occurred on the 27th focused on the Northeast. The peaks were under-estimated at most of the buoys. Same general trends as previous months.

(b) Level 2

i. - Map

A. - Max = 10.09-m, Mean = 3.89-m, U10 = 29.32-m/s

ii. - Validation

A. - Similar to level 1

(c) Level 3N

i. - Map

A. - Max = 5.91-m, Mean = 2.64-m, U10 = 21.55-m/s

ii. - Validation

A. - 44005 - negative bias

B. - 44007 - a little low on 28th storm

C. - 44011 - negative bias

D. - 44013 - low on peaks

(d) Level 3C

i. - Map

- A. - Max = 5.49-m, Mean = 2.31-m, U10 = 19.03-m/s
- ii. - Validation
 - A. - 44009 - pretty good fit
 - B. - 44012 - low on peak on 27th by 2-m
 - C. - 44014 - similar to 44012
 - D. - 44056 - pretty good fit
- (e) Level 3S1
 - i. - Map
 - A. - Max = 4.46-m, Mean = 2.31-m, U10 = 18.93-m/s
 - ii. - Validation
 - A. - 41008 - positive bias
 - B. - 41009 - positive bias
 - C. - 41010 - good fit, but not a lot of data
- (f) Level 3S2
 - i. - Map
 - A. - Max = 4.02-m, Mean = 2.17-m, U10 = 16.38-m/s
 - ii. - Validation
 - A. - 41009 - positive bias

0.4 1992-04

1. Problems
 - (a) No issues running
 - (b) Archived
2. Results
 - (a) Level 1
 - i. - Map
 - A. - Max = 12.41-m, Mean = 3.93-m, U10 = 27.33-m/s
 - B. - One small storm track offshore
 - ii. - Validation

A. - Storm peaks for the month range between 4 and 6-m but the trend is the same. The model results under-estimate the peak wave heights at most buoy locations.

(b) Level 2

i. - Map

A. - Max = 8.50-m, Mean = 2.68-m, U10 = 27.74-m/s

B. - One small track offshore

ii. - Validation

A. - Similar to level 1

(c) Level 3N

i. - Map

A. - Max = 4.04-m, Mean = 1.66-m, U10 = 17.53-m/s

ii. - Validation

A. - 44005 - negative bias

B. - 44007 - negative bias

C. - 44011 - negative bias

D. - 44013 - low on each of 3 peaks

(d) Level 3C

i. - Map

A. - Max = 5.78-m, Mean = 1.88-m, U10 = 22.87-m/s

ii. - Validation

A. - 44009 - good fit

B. - 44012 - good fit

C. - 44014 - a little low on peaks

D. - 44056 - similar to 44014

(e) Level 3S1

i. - Map

A. - Max = 6.03-m, Mean = 1.95-m, U10 = 21.07-m/s

ii. - Validation

A. - 41002 - not enough data

B. - 41008 - a little high at peak

C. - 41009 - low at peak

- D. - 41010 - low at peak by 2-m
- (f) Level 3S2
- i. - Map
 - A. - Max = 5.01-m, Mean = 1.98-m, U10 = 16.11-m/s
 - ii. - Validation
 - A. - 41009 - low at peak by 1.5-m

0.5 1992-05

1. Problems
 - (a) No issues running
 - (b) Archived
2. Results
 - (a) Level 1
 - i. - Map
 - A. - Max = 11.22-m, Mean = 2.74-m, U10 = 27.57-m/s
 - ii. - Validation
 - A. - Wave heights are below 4-m in most cases. The model results are pretty good considering the low waves. The largest peak occurred on the 7th for buoys in the Southern and Central locations.
 - (b) Level 2
 - i. - Map
 - A. - Max = 5.67-m, Mean = 1.88-m, U10 = 18.83-m/s
 - ii. - Validation
 - A. - Similar to level 1
 - (c) Level 3N
 - i. - Map
 - A. - Max = 3.58-m, Mean = 1.64-m, U10 = 14.14-m/s
 - ii. - Validation
 - A. - 44005 - slight negative bias

- B. - 44007 - pretty good fit, but missing local fluctuations
- C. - 44011 - negative bias
- D. - 44013 - low on peaks

(d) Level 3C

- i. - Map
 - A. - Max = 5.67-m, Mean = 1.68-m, U10 = 18.92-m/s
- ii. - Validation
 - A. - 44009 - high on peak on the 8th
 - B. - 44012 - similar to 44009
 - C. - 44014 - good fit
 - D. - 44056 - pretty good fit, but some slight phase issues

(e) Level 3S1

- i. - Map
 - A. - Max = 3.54-m, Mean = 1.57-m, U10 = 16.20-m/s
- ii. - Validation
 - A. - 41002 - pretty good fit, but phase issues
 - B. - 41009 - good fit
 - C. - 41010 - good fit

(f) Level 3S2

- i. - Map
 - A. - Max = 2.76-m, Mean = 1.43-m, U10 = 11.84-m/s
- ii. - Validation
 - A. - 41009 - good fit

0.6 1992-06

1. Problems

- (a) No issues running
- (b) Archived

2. Results

(a) Level 1

- i. - Map
 - A. - Max = 6.74-m, Mean = 2.56-m, U10 = 21.03-m/s

- ii. - Validation

- A. - Low wave month with one storm on the 7th (wave heights \gtrsim 4-m). The model results under-estimate the wave heights at the peak consistent with previous months.

(b) Level 2

- i. - Map

- A. - Max = 3.94-m, Mean = 1.75-m, U10 = 17.64-m/s

- ii. - Validation

- A. - Similar to level 1

(c) Level 3N

- i. - Map

- A. - Max = 3.30-m, Mean = 1.11-m, U10 = 15.92-m/s

- ii. - Validation

- A. - 44005 - decent fit, but low for most of the month
 - B. - 44007 - negative bias
 - C. - 44011 - low at peaks
 - D. - 44013 - low at peaks

(d) Level 3C

- i. - Map

- A. - Max = 2.48-m, Mean = 1.23-m, U10 = 15.15-m/s

- ii. - Validation

- A. - 44009 - good fit but 0.5-m low at peak
 - B. - 44012 - similar to 44009
 - C. - 44014 - negative bias
 - D. - 44056 - missed peaks

(e) Level 3S1

- i. - Map

- A. - Max = 2.48-m, Mean = 1.23-m, U10 = 15.15-m/s

- ii. - Validation

- A. - 41002 - negative bias

B. - 41009 - really small waves, decent fit

C. - 41010 - low on peak on the 27th

(f) Level 3S2

i. - Map

A. - Max = 1.90-m, Mean = 1.24-m, U10 = 11.31-m/s

ii. - Validation

A. - 41009 - really small waves, decent fit.

0.7 1992-07

1. Problems

(a) No issues running

(b) Archived

2. Results

(a) Level 1

i. - Map

A. - Max = 8.20-m, Mean = 2.66-m, U10 = 23.25-m/s

B. - Small storm track offshore

ii. - Validation

A. - Low wave month. No events. Negative bias at Northern buoy locations, positive bias at some Southern buoy locations.

(b) Level 2

i. - Map

A. - Max = 4.12-m, Mean = 1.70-m, U10 = 17.68-m/s

B. - One small storm offshore

ii. - Validation

A. - Similar to level 1

(c) Level 3N

i. - Map

A. - Max = 2.09-m, Mean = 1.04-m, U10 = 13.17-m/s

- ii. - Validation
 - A. - 44005 - negative bias
 - B. - 44007 - small waves
 - C. - 44011 - negative bias
 - D. - 44013 - negative bias

(d) Level 3C

- i. - Map
 - A. - Max = 2.21-m, Mean = 1.15-m, U10 = 12.45-m/s
- ii. - Validation
 - A. - 44009 - good fit
 - B. - 44012 - good fit
 - C. - 44014 - negative bias
 - D. - 44056 - good fit, small waves

(e) Level 3S1

- i. - Map
 - A. - Max = 2.21-m, Mean = 1.11-m, U10 = 12.60-m/s
- ii. - Validation
 - A. - 41002 - negative bias
 - B. - 41009 - positive bias
 - C. - 41010 - good fit

(f) Level 3S2

- i. - Map
 - A. - Max = 2.05-m, Mean = 1.36-m, U10 = 10.72-m/s
- ii. - Validation
 - A. - 41009 - positive bias

0.8 1992-08

1. Problems

- (a) No issues running.
- (b) Archived

2. Results

(a) Level 1

i. - Map

A. - Max = 11.40-m, Mean = 2.61-m, U10 = 31.05-m/s

B. - One track making landfall at Florida

ii. - Validation

A. - Boring month for the North and Central buoy locations. The Southern buoy locations had the hurricane come through on the 24th. The model over-estimated the hurricane wave heights, but all other smaller events were under-estimated.

(b) Level 2

i. - Map

A. - Max = 13.74-m, Mean = 1.67-m, U10 = 45.99-m/s

B. - One track making landfall in Southern Florida

ii. - Validation

A. - Similar to level 1

(c) Level 3N

i. - Map

A. - Max = 2.58-m, Mean = 1.03-m, U10 = 17.02-m/s

ii. - Validation

A. - 44005 - negative bias

B. - 44007 - low on peaks small wave

C. - 44011 - negative bias

D. - 44013 - negative bias

(d) Level 3C

i. - Map

A. - Max = 2.65-m, Mean = 1.10-m, U10 = 14.26-m/s

ii. - Validation

A. - 44009 - low at peaks

B. - 44012 - similar to 44009

C. - 44014 - negative bias

D. - 44056 - missed peak on the 7th by 1-m

(e) Level 3S1

i. - Map

A. - Max = 5.06-m, Mean = 1.24-m, U10 = 15.06-m/s

ii. - Validation

A. - 41002 - not enough data

B. - 41009 - over-estimation of peak on the 24th

C. - 41010 - good fit including storm peak

(f) Level 3S2

i. - Map

A. - Max = 15.41-m, Mean = 1.43-m, U10 = 46.87-m/s

B. - One track going through Bahamas to Florida

ii. - Validation

A. - 41009 - over-estimation of storm peak on 24th.

0.9 1992-09

1. Problems

(a) No issues running

(b) Archived

2. Results

(a) Level 1

i. - Map

A. - Max = 8.81-m, Mean = 2.77-m, U10 = 27.99-m/s

B. - Lots of storm tracks but only one runs up coastline and makes landfall up north

ii. - Validation

A. - Low wave heights for buoy locations in the south and locations north of Cape Cod. However the locations in between had the storm come through on the 25th - 26th with wave heights \gtrsim 4-m. The model either matched the results well or over-estimated wave heights during this event.

- (b) Level 2
 - i. - Map
 - A. - Max = 8.81-m, Mean = 1.93-m, U10 = 31.51-m/s
 - B. - 3 storm tracks with one making landfall in Delaware.
 - ii. - Validation
 - A. - Similar to level 1
- (c) Level 3N
 - i. - Map
 - A. - Max = 4.26-m, Mean = 1.47-m, U10 = 19.54-m/s
 - ii. - Validation
 - A. - 44005 - low waves | 2-m good fit
 - B. - 44007 - some over-estimation and some under-estimation
 - C. - 44011 - negative bias early, over-estimation of event on 26th
 - D. - 44013 - decent fit
- (d) Level 3C
 - i. - Map
 - A. - Max = 7.73-m, Mean = 1.58-m, U10 = 26.52-m/s
 - B. - One track making landfall in Delaware.
 - ii. - Validation
 - A. - 44009 - Over-estimation of event on 26th
 - B. - 44012 - similar to 44009
 - C. - 44014 - similar to 44009
 - D. - 44056 - good fit, missed wave height attenuation after storm
- (e) Level 3S1
 - i. - Map
 - A. - Max = 5.32-m, Mean = 1.54-m, U10 = 21.42-m/s
 - B. - One storm track making circle offshore
 - ii. - Validation
 - A. - 41002 - good fit
 - B. - 41009 - good fit

C. - 41010 - good fit

(f) Level 3S2

i. - Map

A. - Max = 4.17-m, Mean = 1.57-m, U10 = 16.74-m/s

B. - One track offshore

ii. - Validation

A. - 41009 - good fit

0.10 1992-10

1. Problems

(a) No issues running

(b) Archived

2. Results

(a) Level 1

i. - Map

A. - Max = 10.69-m, Mean = 2.99-m, U10 = 27.32-m/s

B. - 4 storm tracks all offshore

ii. - Validation

A. - An event on the 7th had wave heights in excess of 6-m.

The model tends to under-estimate the peaks. The rest of the month has a pretty good match between model and measured.

(b) Level 2

i. - Map

A. - Max = 10.89-m, Mean = 2.60-m, U10 = 31.48-m/s

B. - 2 storm tracks in domain, offshore

ii. - Validation

A. - Similar to level 1

(c) Level 3N

i. - Map

- A. - Max = 3.88-m, Mean = 1.81-m, U10 = 16.28-m/s
- ii. - Validation
- A. - 44005 - negative bias
 - B. - 44007 - good fit
 - C. - 44011 - low at all peaks
 - D. - 44013 - low at only peak of the month on the 20th.

(d) Level 3C

- i. - Map
- A. - Max = 5.88-m, Mean = 1.88-m, U10 = 19.10-m/s
- ii. - Validation
- A. - 44009 - good fit
 - B. - 44012 - good fit
 - C. - 44014 - negative bias
 - D. - 44056 - low at peak on 5th, with phase issues.

(e) Level 3S1

- i. - Map
- A. - Max = 5.55-m, Mean = 1.92-m, U10 = 21.87-m/s
 - B. - One storm track offshore
- ii. - Validation
- A. - 41002 - good fit
 - B. - 41009 - good fit
 - C. - 41010 - low at peak

(f) Level 3S2

- i. - Map
- A. - Max = 4.60-m, Mean = 1.90-m, U10 = 17.70-m/s
 - B. - One storm track offshore
- ii. - Validation
- A. - 41009 - good fit

0.11 1992-11

1. Problems

- (a) No issues running
- (b) Archived

2. Results

- (a) Level 1
 - i. - Map
 - A. - Max = 12.60-m, Mean = 4.76-m, U10 = 27.24-m/s
 - ii. - Validation
 - A. - A few peaks through the month greater than 4-m. The trend is to under-estimate the peaks of these storms, but the rest of the month looks pretty good.
- (b) Level 2
 - i. - Map
 - A. - Max = 8.03-m, Mean = 3.20-m, U10 = 24.44-m/s
 - ii. - Validation
 - A. - Similar to level 1
- (c) Level 3N
 - i. - Map
 - A. - Max = 4.05-m, Mean = 2.06-m, U10 = 20.98-m/s
 - ii. - Validation
 - A. - 44005 - negative bias
 - B. - 44007 - negative bias
 - C. - 44011 - not enough data
 - D. - 44013 - low at peak on 25th by 1-m
- (d) Level 3C
 - i. - Map
 - A. - Max = 4.63-m, Mean = 2.15-m, U10 = 21.16-m/s
 - ii. - Validation
 - A. - 44012 - good fit, limited data
 - B. - 44014 - good fit
 - C. - 44056 - pretty good fit, missed some peaks
- (e) Level 3S1

- i. - Map
 - A. - Max = 5.41-m, Mean = 2.39-m, U10 = 15.08-m/s
 - ii. - Validation
 - A. - 41002 - over-estimates peak
 - B. - 41009 - good fit
 - C. - 41010 - slight positive bias
- (f) Level 3S2
- i. - Map
 - A. - Max = 6.17-m, Mean = 2.52-m, U10 = 15.18-m/s
 - ii. - Validation
 - A. - 41009 - good fit, slight positive bias

0.12 1992-12

1. Problems
 - (a) No issues running
 - (b) Archived
2. Results
 - (a) Level 1
 - i. - Map
 - A. - Max = 12.94-m, Mean = 5.01-m, U10 = 26.84-m/s
 - ii. - Validation
 - A. - A large wave height event occurred along the entire coast between 11th and 20th with wave heights up to 9-m at times. The results were mixed with some under-estimation, some over-estimation and at times a good fit. No specific trends are noticeable.
 - (b) Level 2
 - i. - Map
 - A. - Max = 11.36-m, Mean = 4.08-m, U10 = 27.09-m/s
 - ii. - Validation
 - A. - Similar to level 1

(c) Level 3N

i. - Map

A. - Max = 10.72-m, Mean = 3.37-m, U10 = 23.71-m/s

ii. - Validation

A. - 44005 - slight negative bias, but pretty good fit at peak

B. - 44007 - greater negative bias at peak than 44005

C. - 44013 - pretty good fit

(d) Level 3C

i. - Map

A. - Max = 7.85-m, Mean = 2.83-m, U10 = 23.66-m/s

ii. - Validation

A. - 44014 - negative bias at largest peak

B. - 44056 - decent fit with some phase issues

(e) Level 3S1

i. - Map

A. - Max = 6.77-m, Mean = 2.76-m, U10 = 20.86-m/s

ii. - Validation

A. - 41002 - under-estimation of first peak, over-estimation of second peak, negative bias overall

B. - 41009 - over-estimation of peak

C. - 41010 - similar to 41002

(f) Level 3S2

i. - Map

A. - Max = 5.64-m, Mean = 2.34-m, U10 = 14.53-m/s

ii. - Validation

A. - 41009 - over-estimation at peak on 16th.

0.13 1992-stats

0.13.1 Level 1

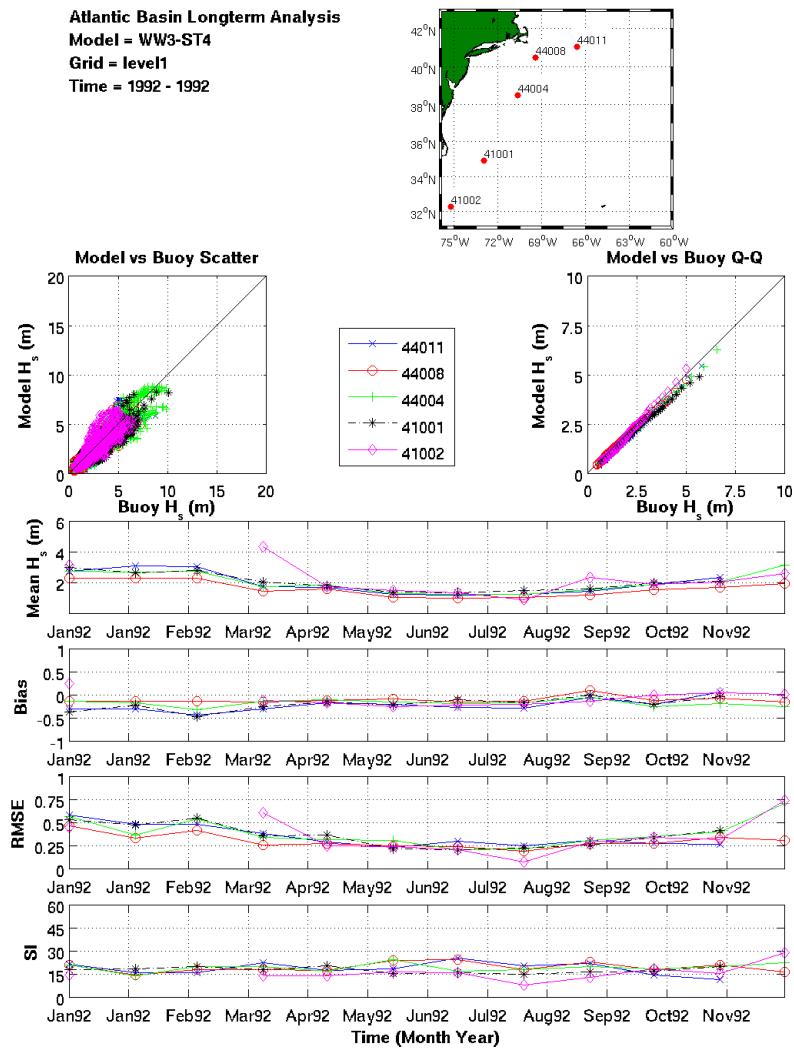


Figure 1: Comp 2 for Level 1

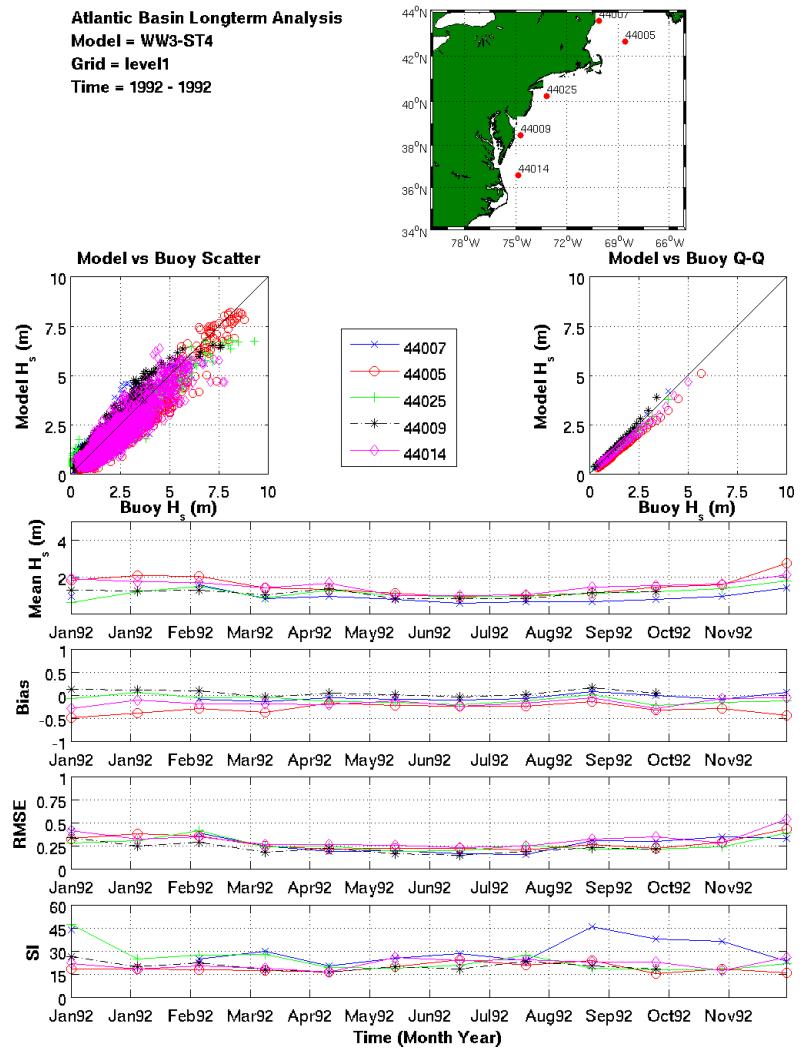


Figure 2: Comp 3 for Level 1

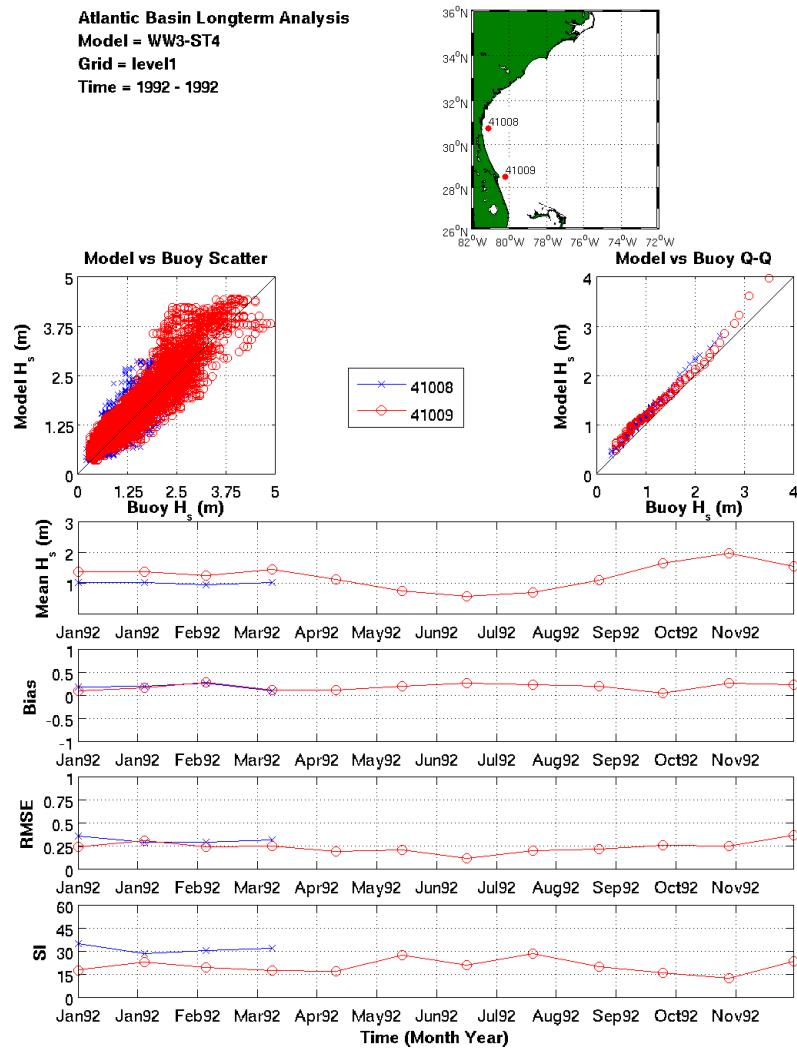


Figure 3: Comp 4 for Level 1

0.13.2 Level 2

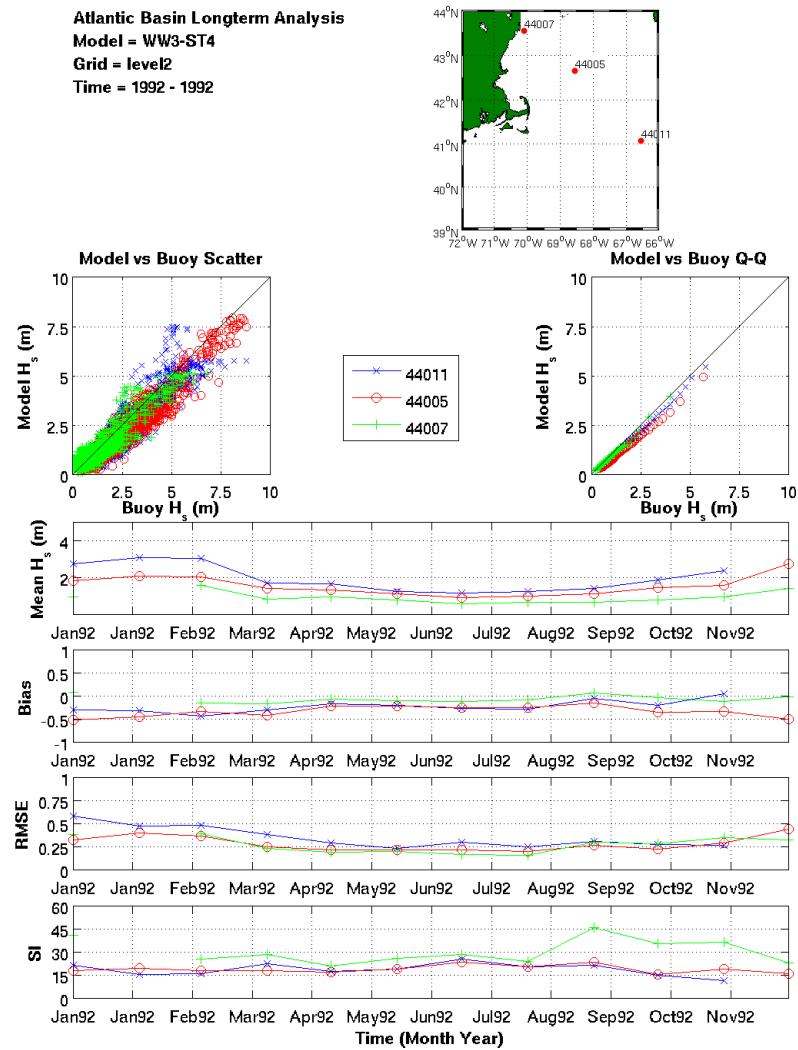


Figure 4: Comp 2 for Level 2

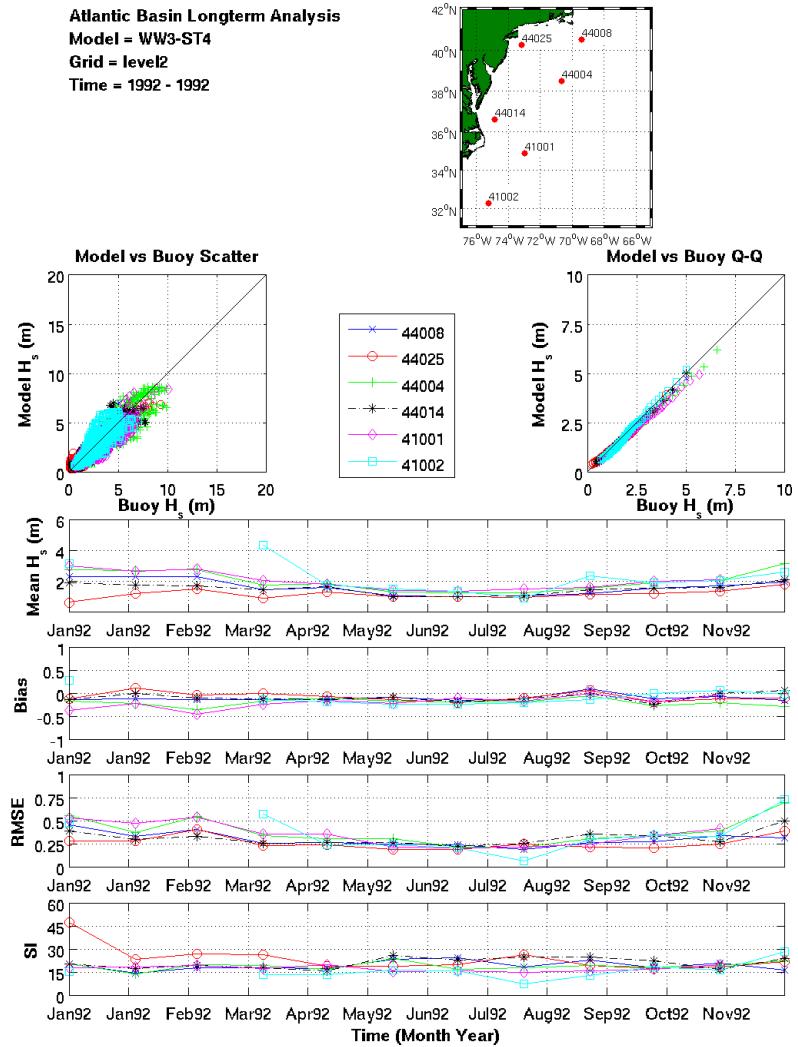


Figure 5: Comp 3 for Level 2

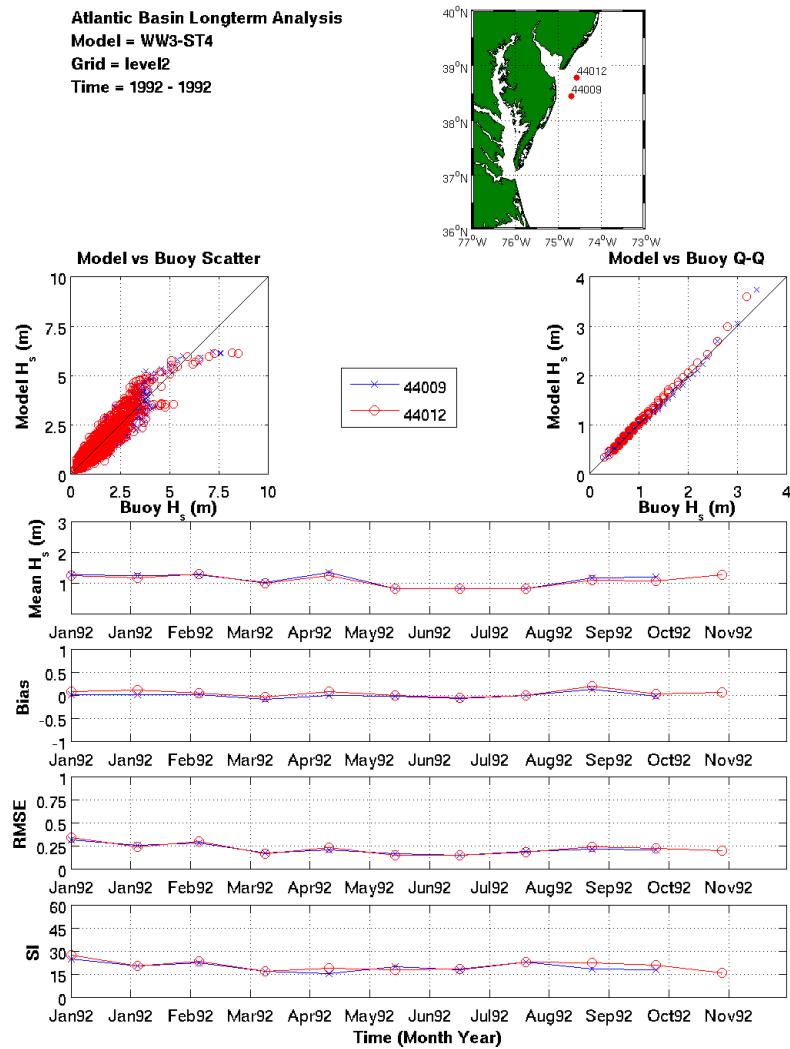


Figure 6: Comp 4 for Level 2

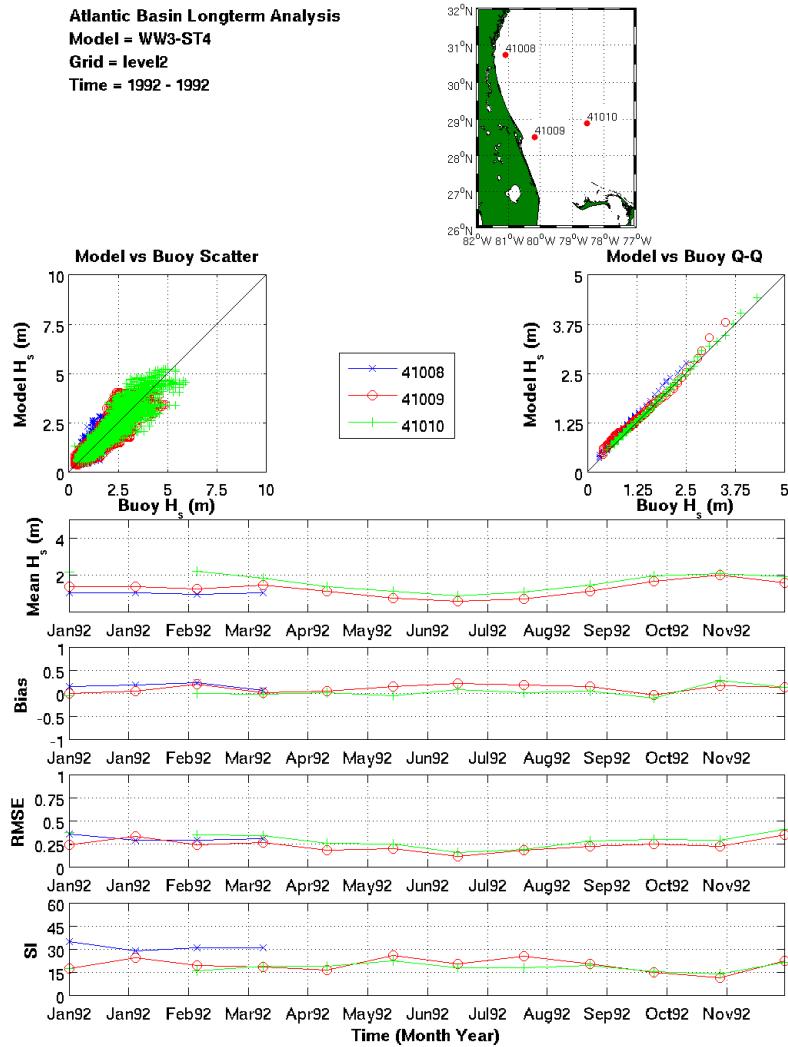


Figure 7: Comp 5 for Level 2

0.13.3 Level 3N

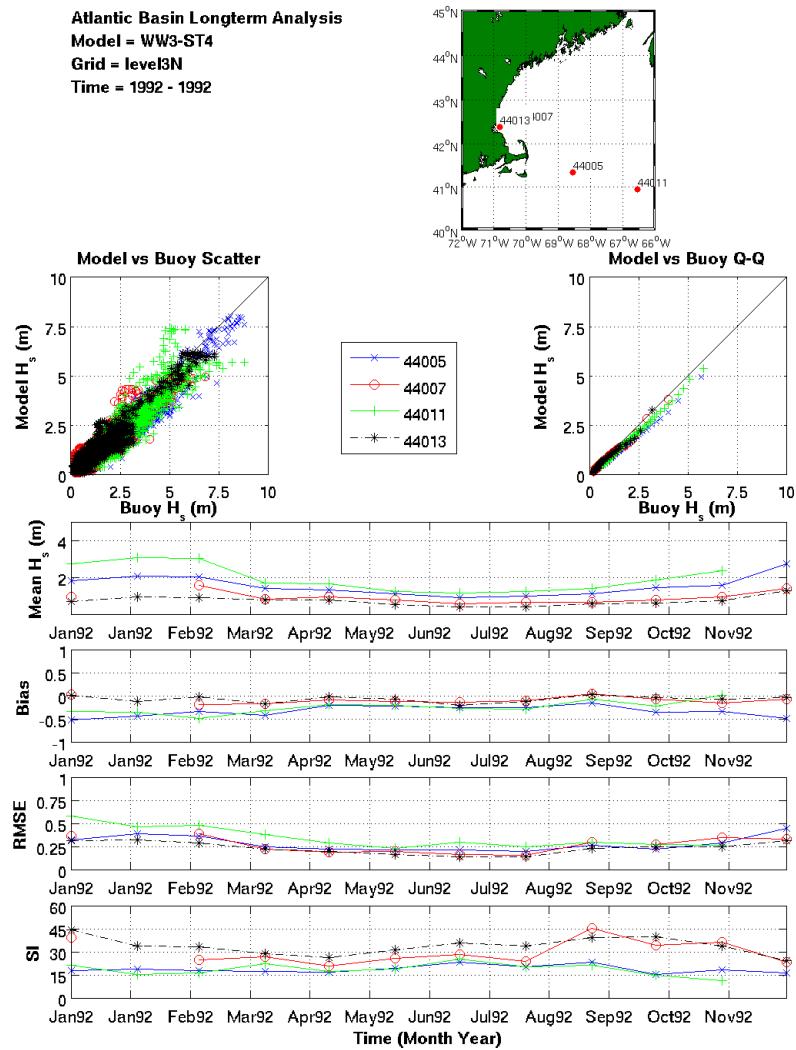


Figure 8: Comp 1 for Level 3N

0.13.4 Level 3C

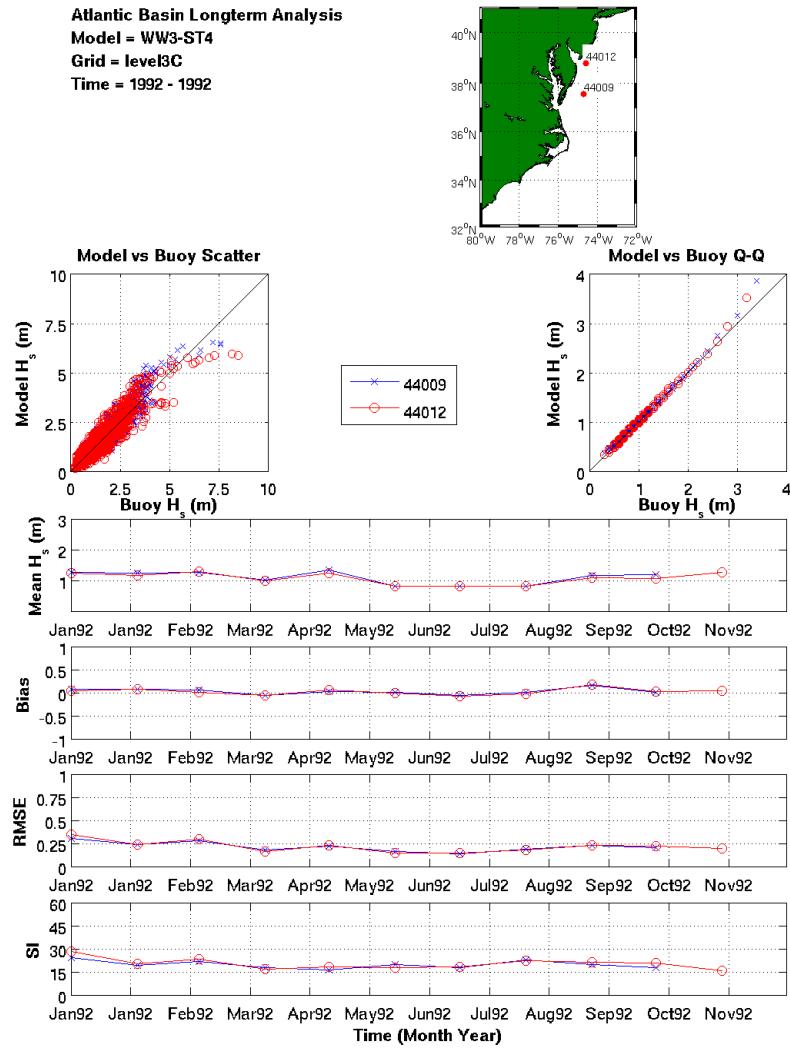


Figure 9: Comp 1 for Level 3C

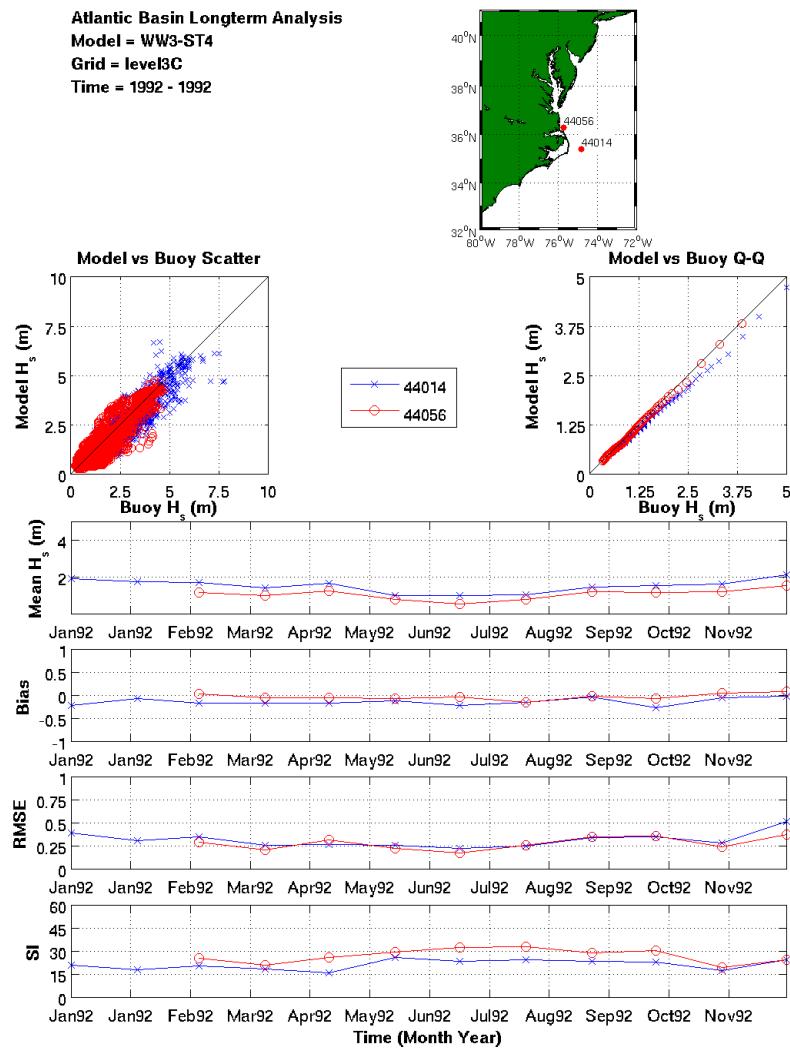


Figure 10: Comp 2 for Level 3C

0.13.5 Level 3S1

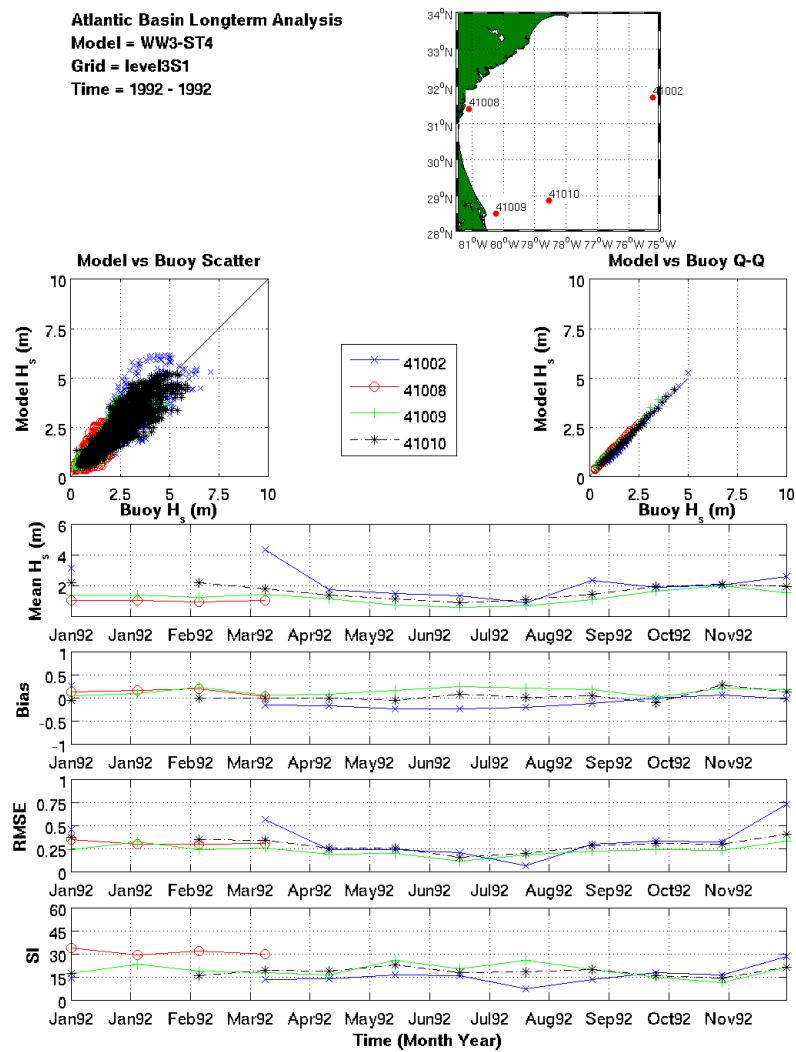


Figure 11: Comp 1 for Level 3S1

0.13.6 Level 3S2

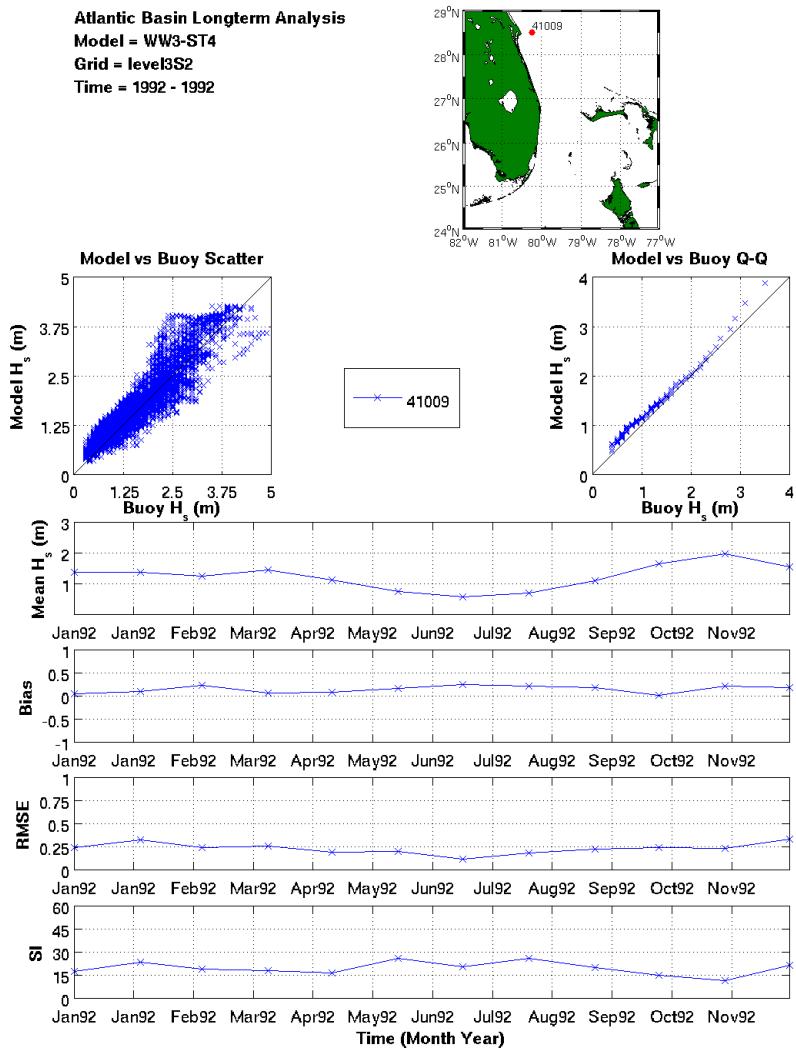


Figure 12: Comp 1 for Level 3S2