Gulf Stream Note # 4 - 2019

The Gulf Stream Near the Rhumb Line Newport-Bermuda June 19, 2019

An Analysis of Conditions

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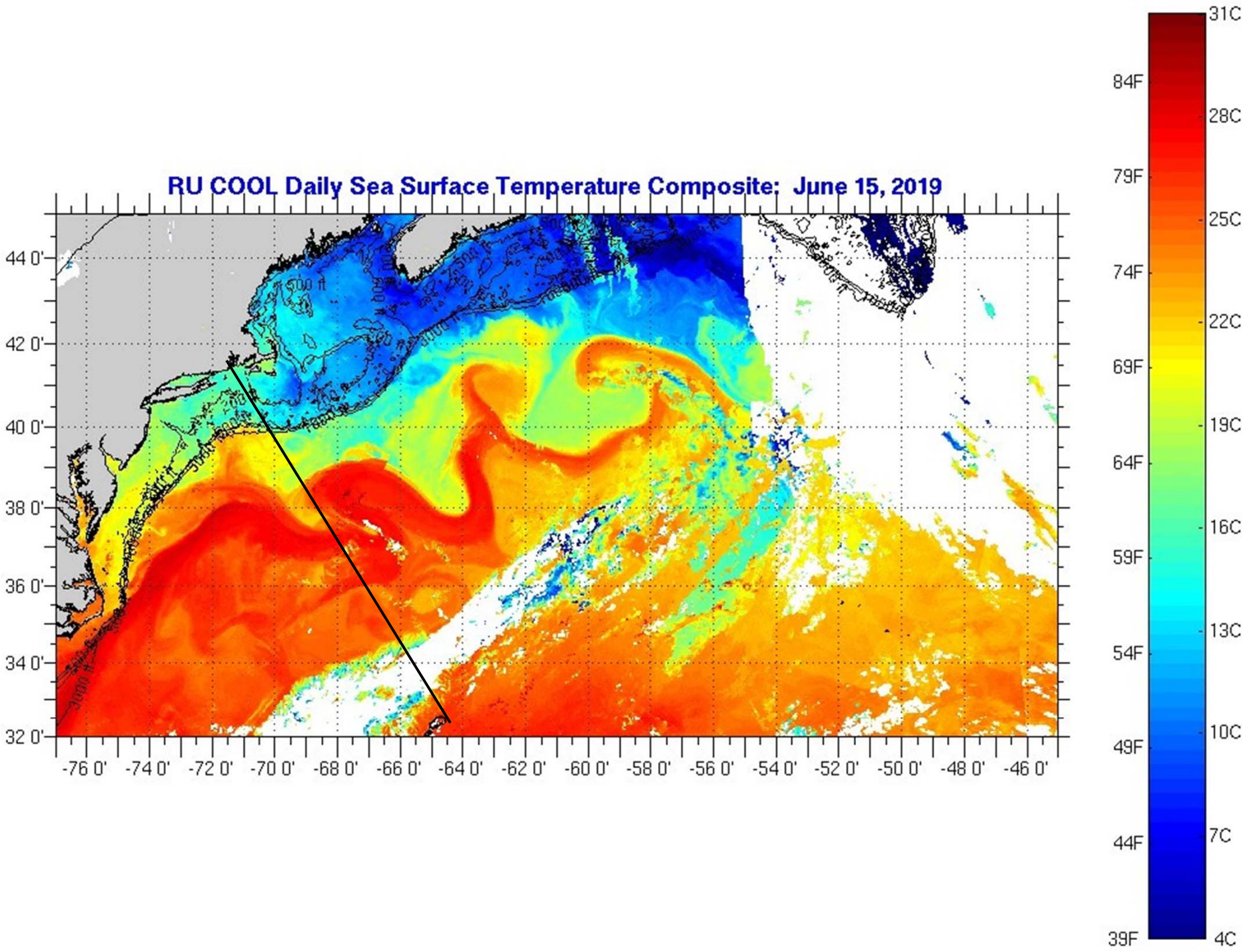
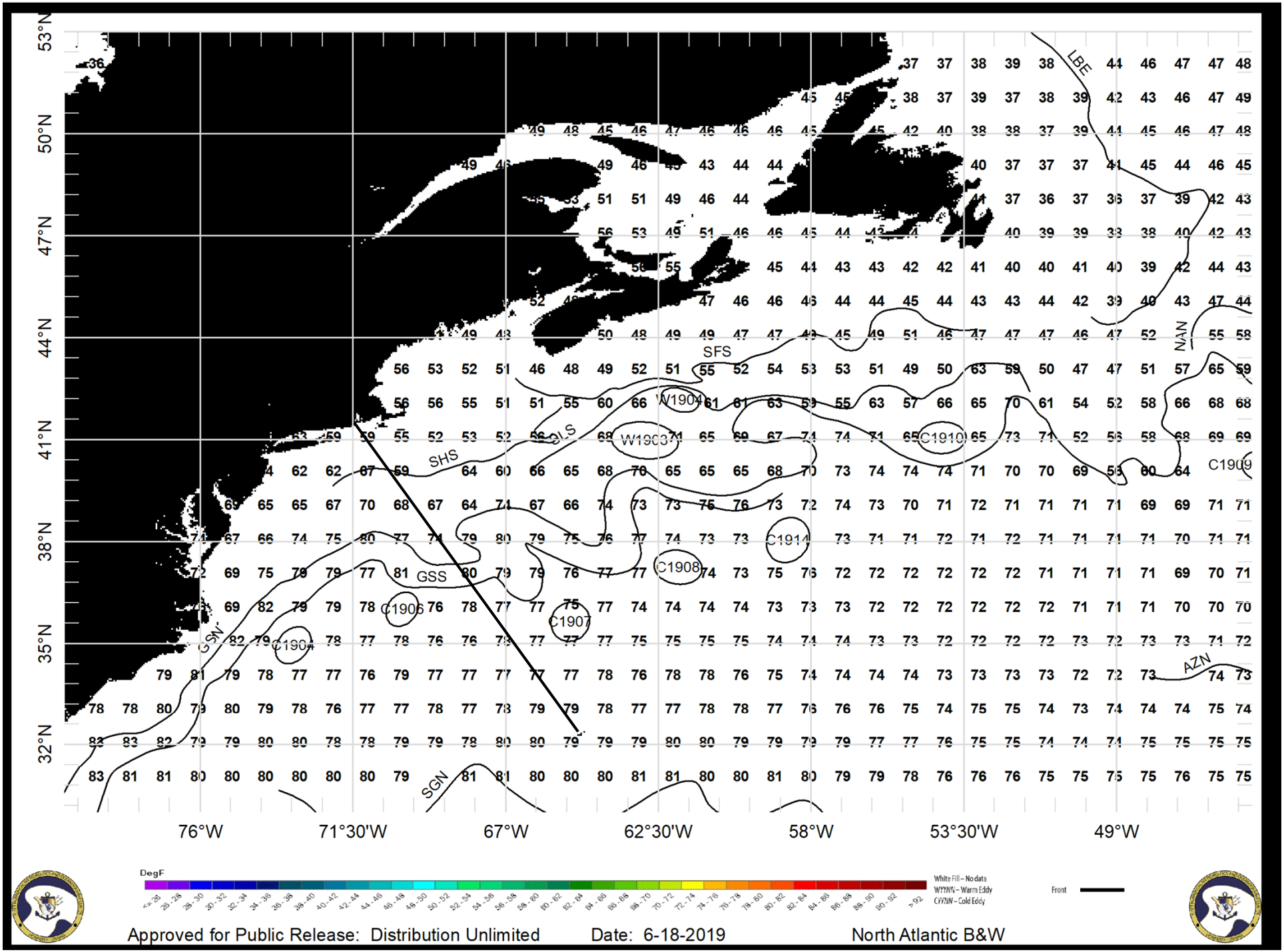
Sincbve your departure there has been very little change in the structure and location of the Gulf Stream and the associated rotational features. The three figures attached show the meander remaining open with only slight movement to the west. Between Bermuda and the main body of the Gulf Stream the altimetry based model continues to show a series of well defined rotational features. Your experience gained from the trip down to Bermuda indicates that these features are real, and not some computational artifact, with current speeds ranging from 1-2 kts. This combination of data suggests that the favored course Bermuda to Newport could closely follow the rhumb line to start and slowly shift to the east on approach to the main body of the Stream, with the extent pof the shift depending on the winds and your interest in taking advantage of the strong north going currents in the easterly limb of the meander. Beyond the Stream, moving on the continental shelf, there remains a body of warmer water favoring some slight set to the east. Depending on wind conditions, this should not be a major navigational challenge.

With regard to the probable currents associated with the meander, the conditions observed during the Newport- Bermuda leg would suggest that the core of the flow is located in the vicinity of the transition in color from green to yellow, or the area where there is a significant change in sea surface heights (See 17 June Altimetry plot attached). On the June 17th plot this line is located approximately 70nm east of the rhumb line. Closer to the rhumb line current

speeds can be expected to drop off significantly. In fact if NW winds were to occur and were strong enough and of sufficient duration adverse currents could be found in this area. This effect of winds is important to remember (Rule of Thumb: Current speed = ~ 3% of wind speed).

Trust all will have a safe and enjoyable sail back to Newport. We'll be watching !!


RU COOL Daily Sea Surface Temperature Composite: June 15, 2019
44 0'
42 0'
40 0'
38 0'
36 0'
34 0'
32 0'
-76 0'
-74 0'
-72 0'
-70 0'
-68 0'
-66 0'
-64 0'
-62 0'
-60 0'
-58 0'
-56 0'
-54 0'
-52 0'
-50 0'
-48 0'
-46 0'
31C
84F
28C
79F
25C
74F
22C
69F
19C
64F
16C
59F
13C
54F
10C
49F
7C
44F
39F
4C



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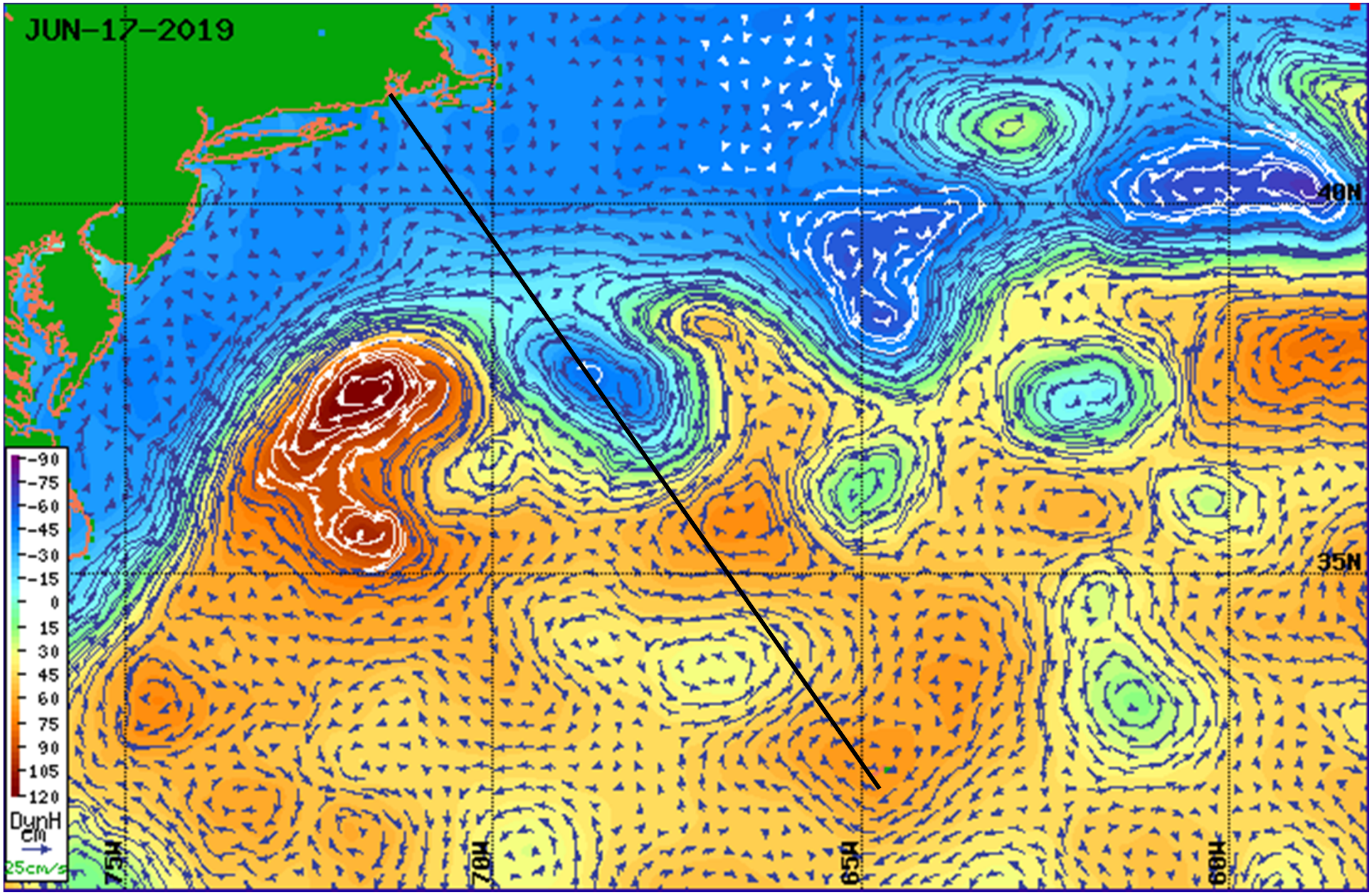
JUN-17-2019
40N
35N
75W
70W
65W
60W
-90
-75
-60
-45
-30
-15
0
15
30
45
60
75
90
105
120
DynH
cm
25cm/s