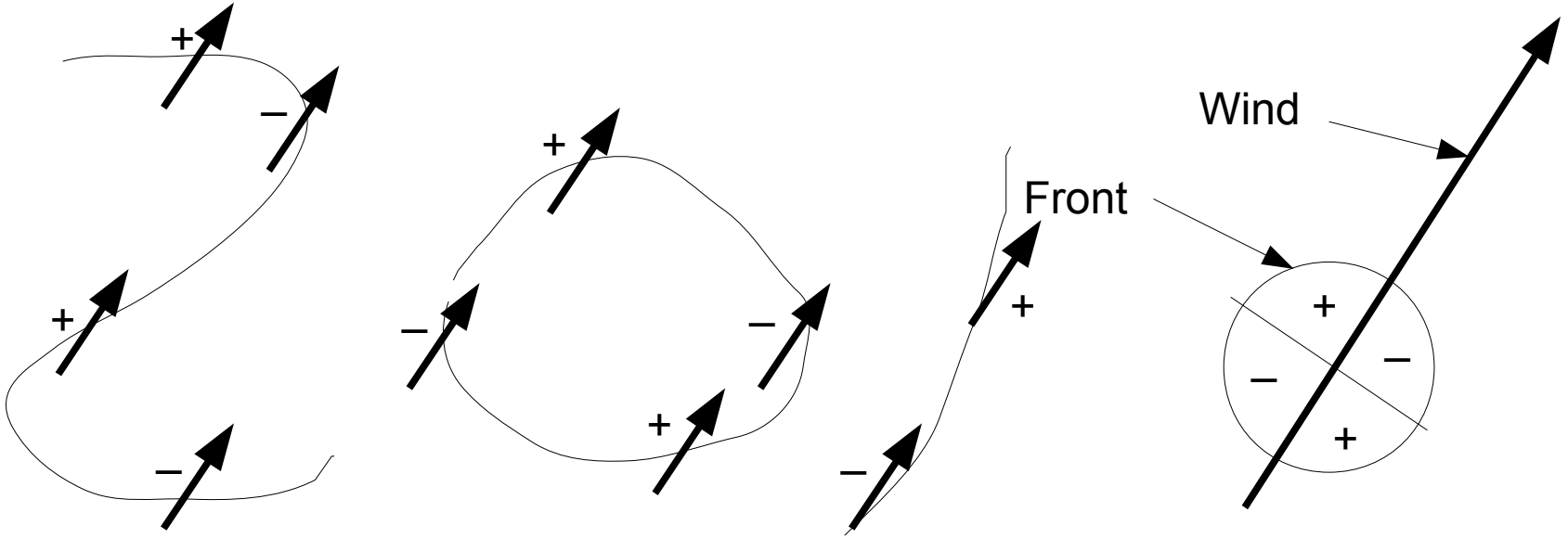
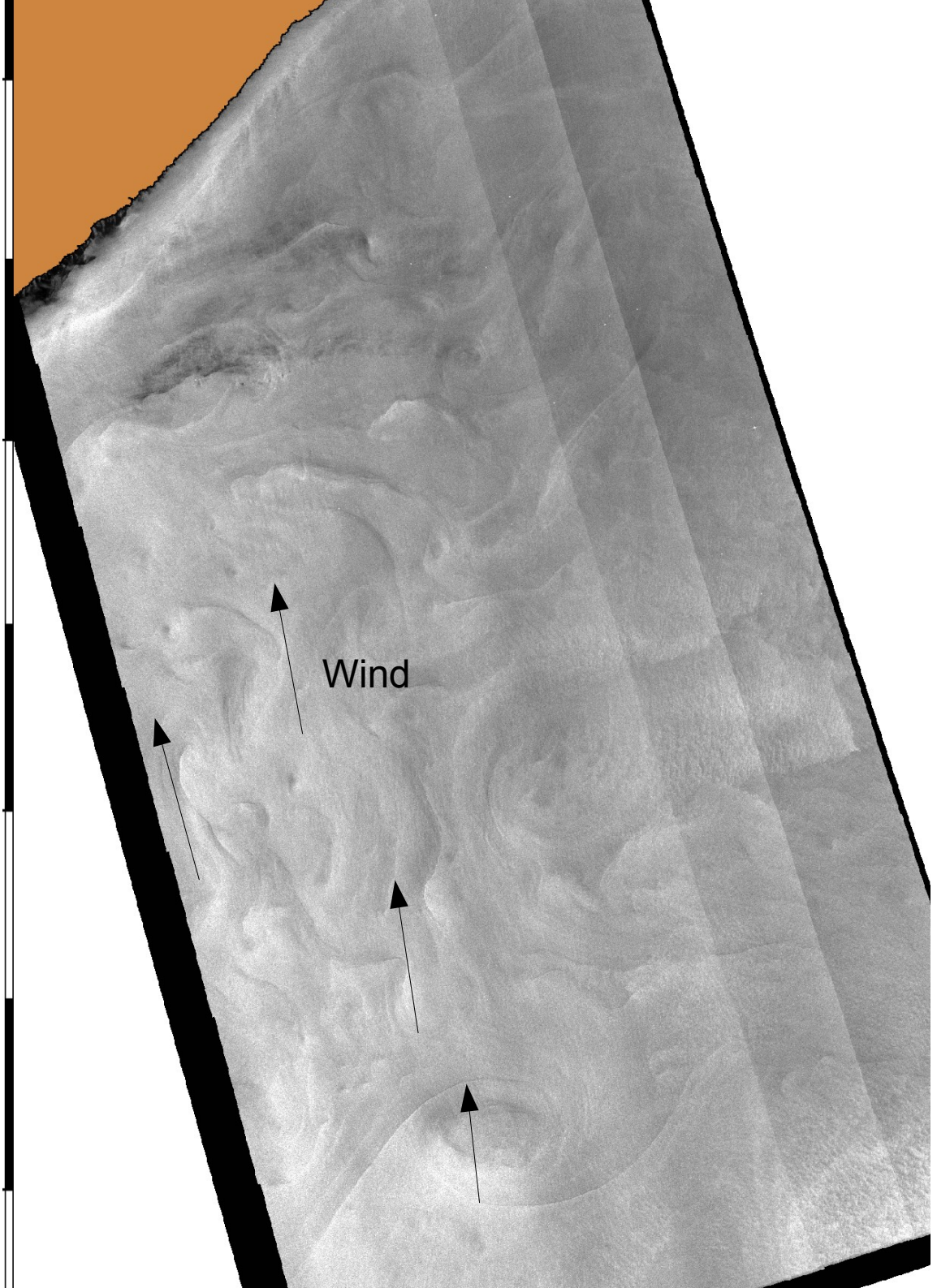
2010 supersite observations of Meso/submeso-scale convergence and divergence at frontal zone.

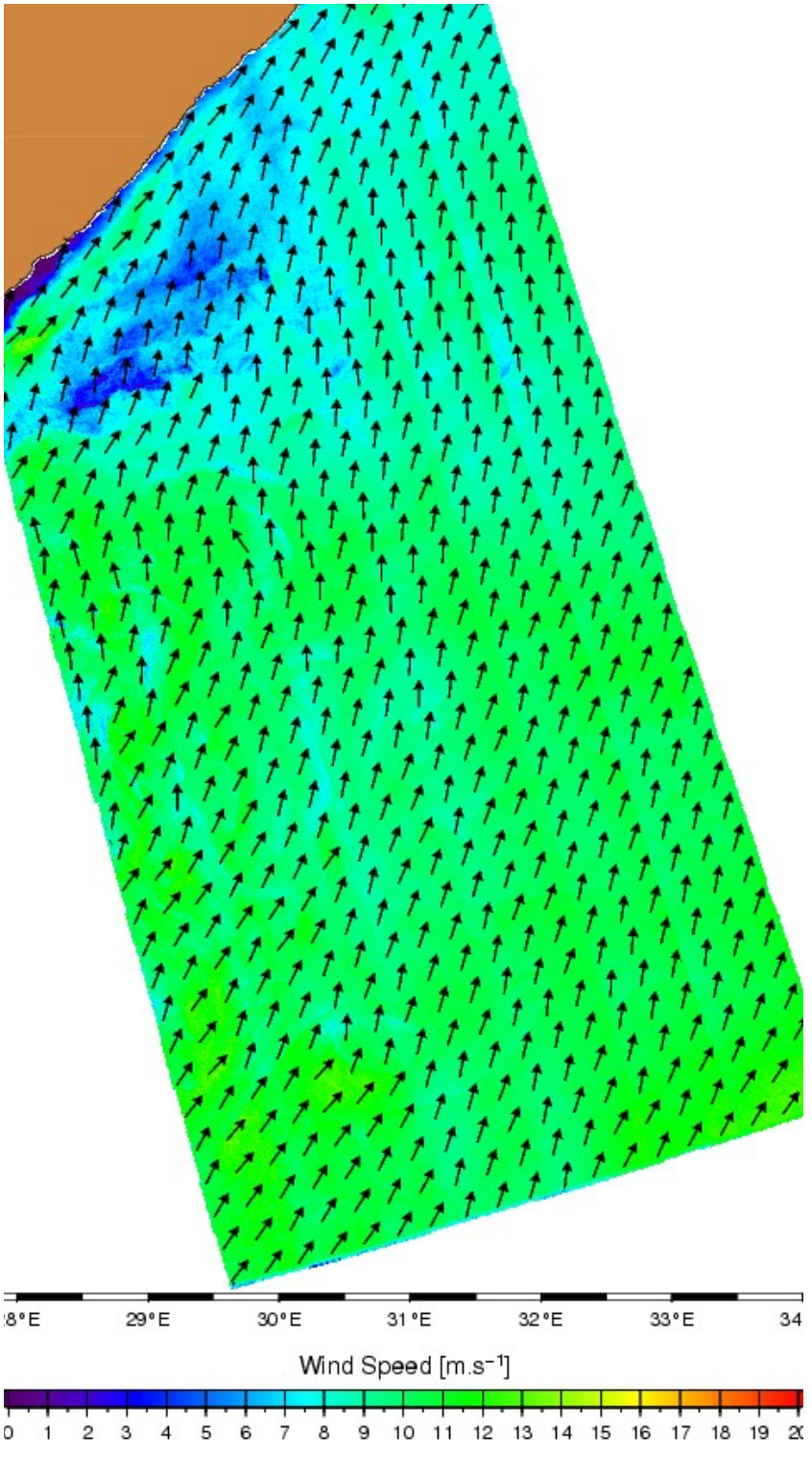
Observations of enhancement (+) or reduction (-) of roughness depending on angle between front and wind. Apparent independance of SST gradient sign or current shear sign.

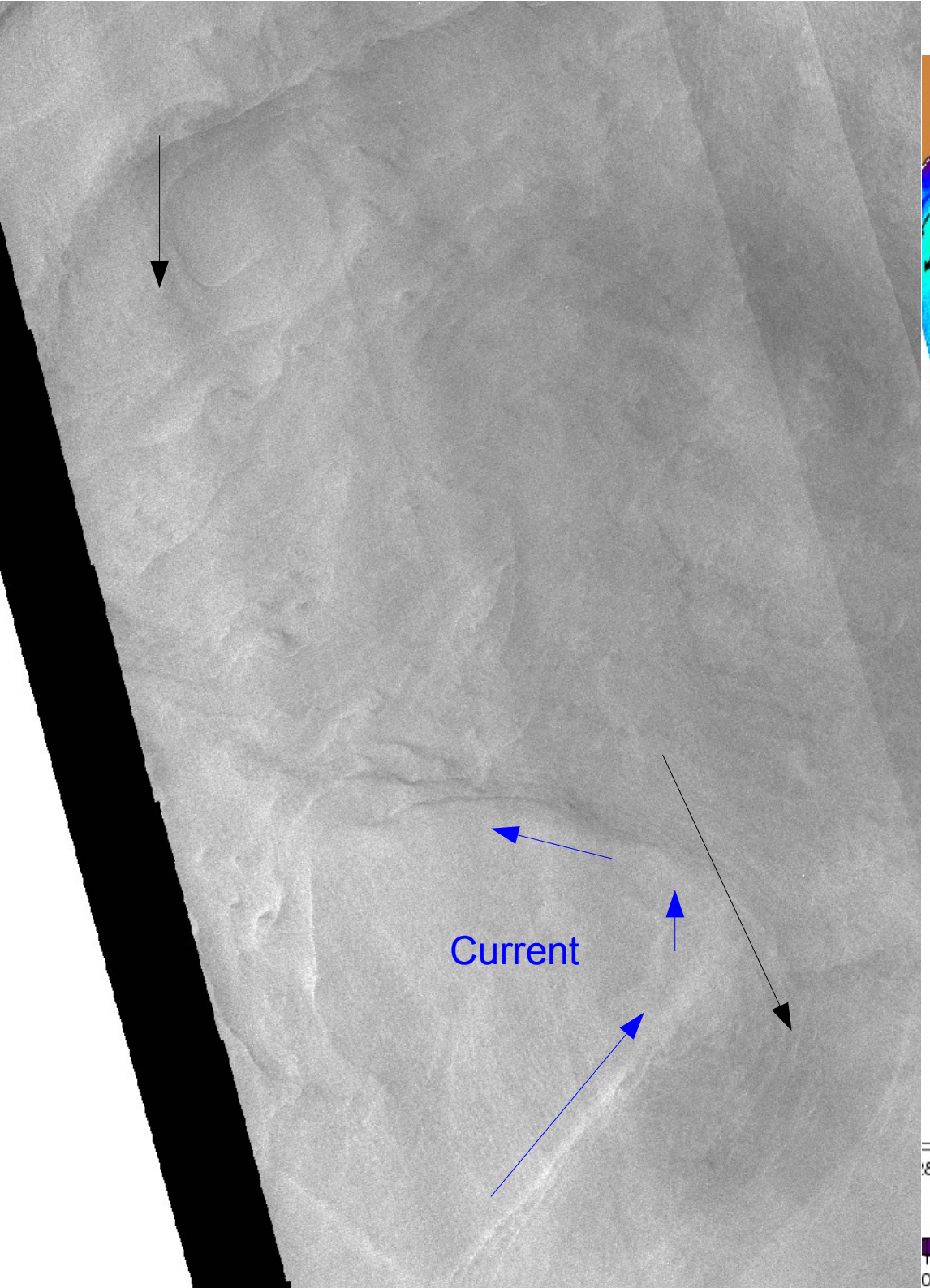
Part1 : Agulhas (Southern Hemisphere)



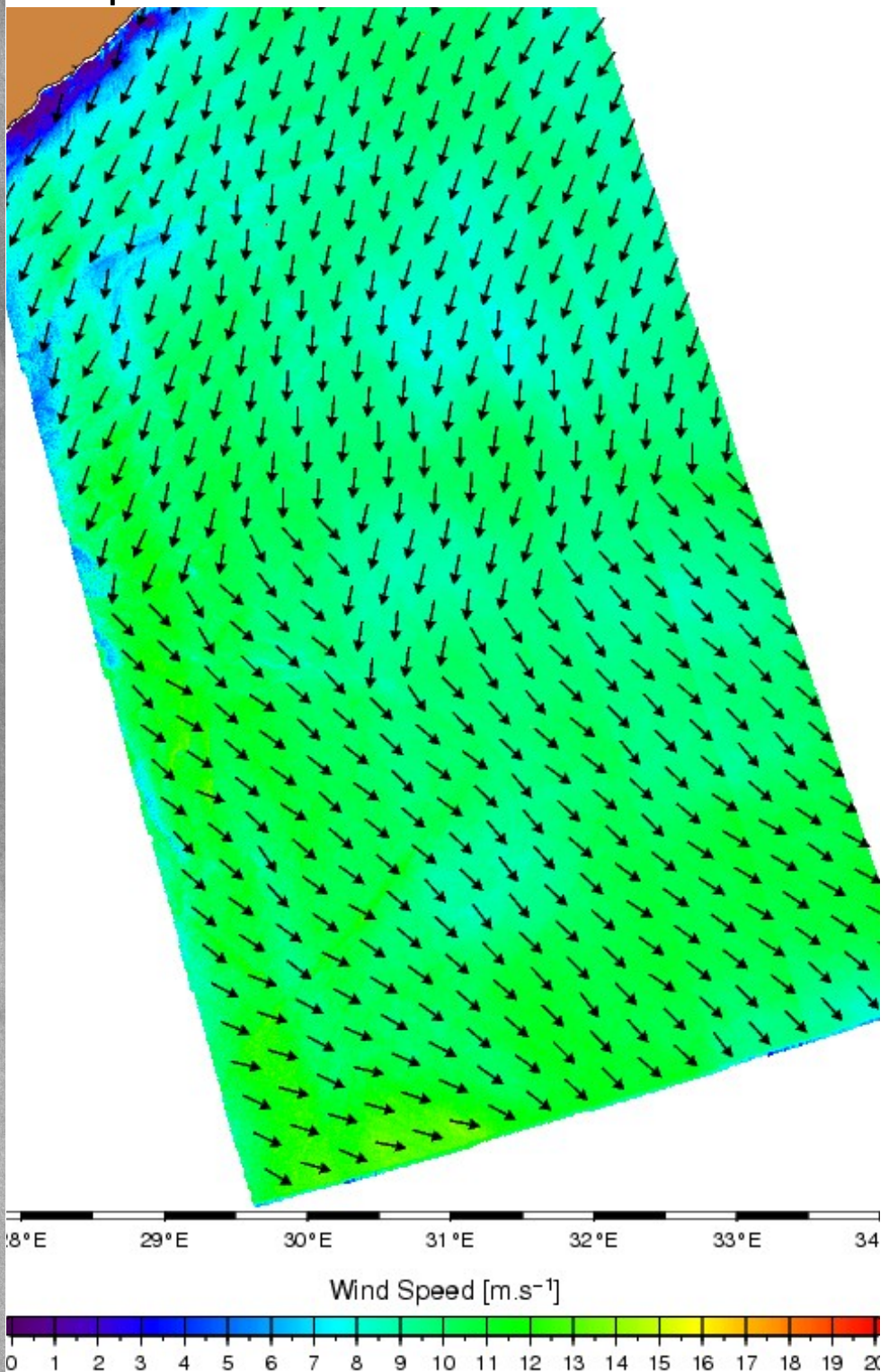


12 Sept 2010 20:41

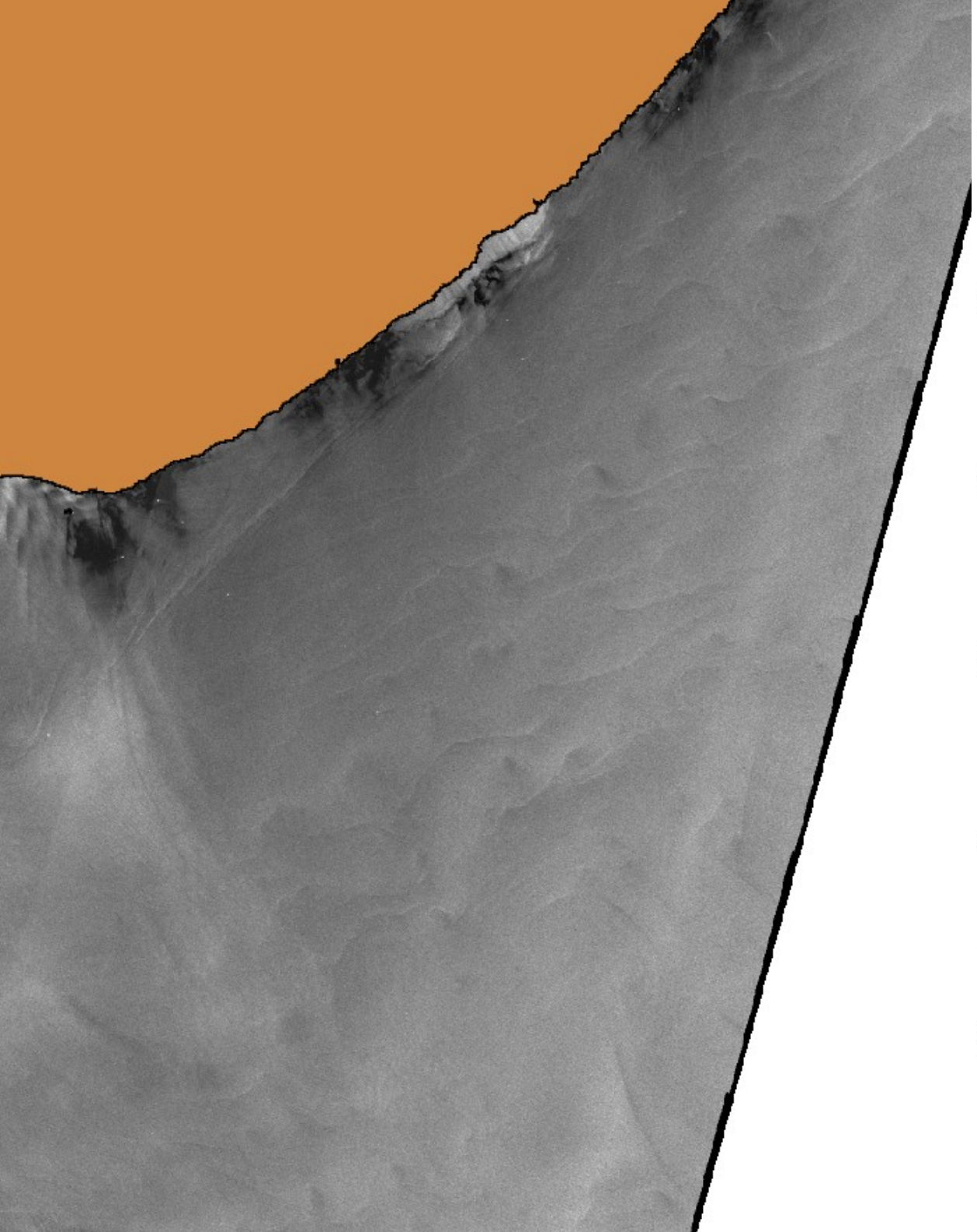


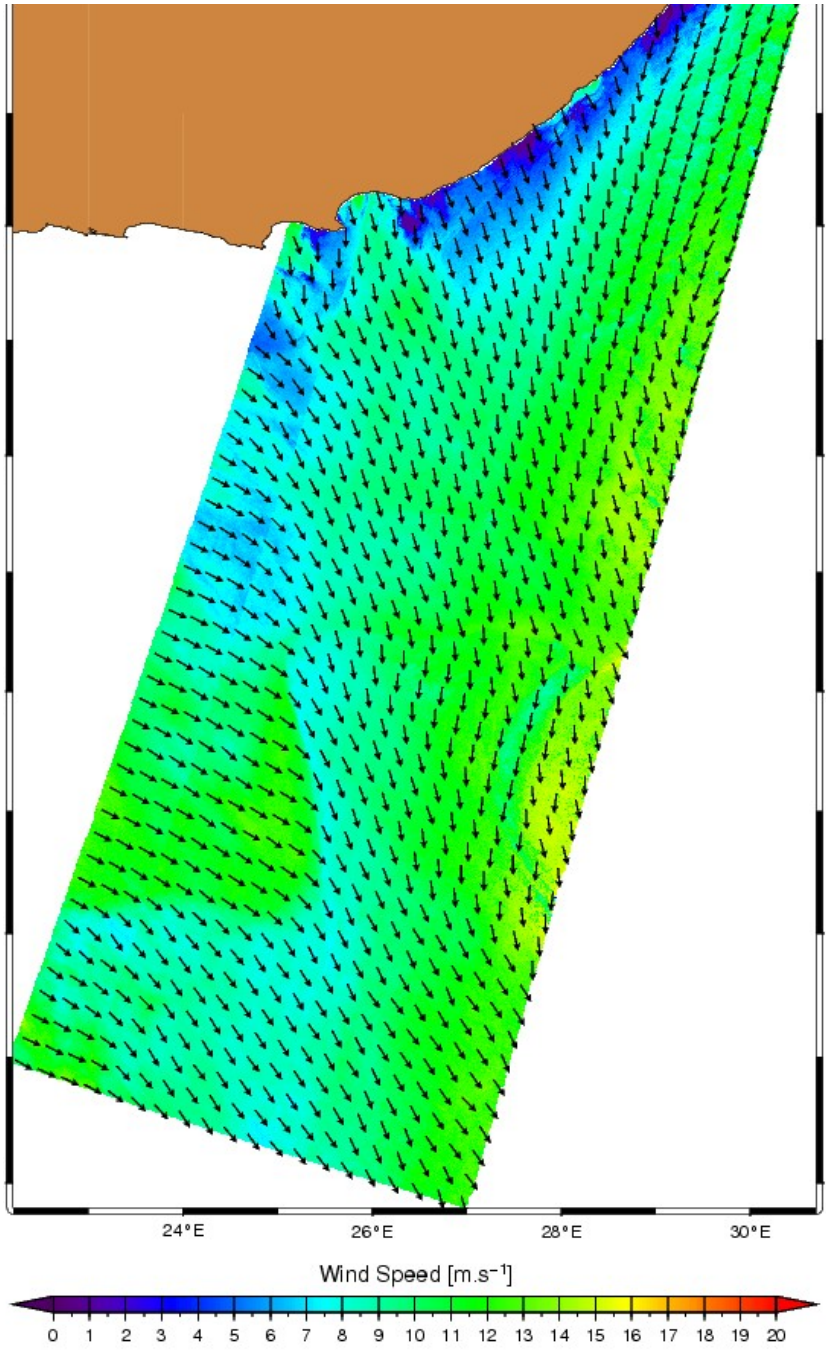


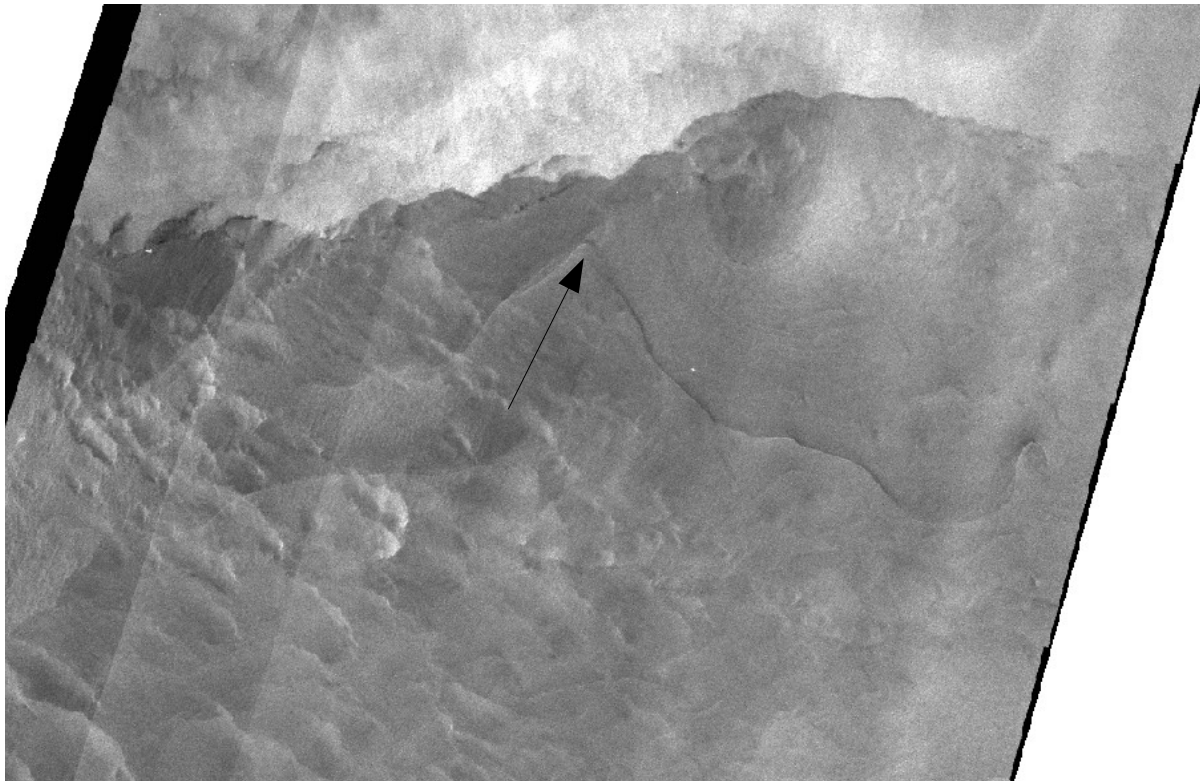
25 April 2010 20:42

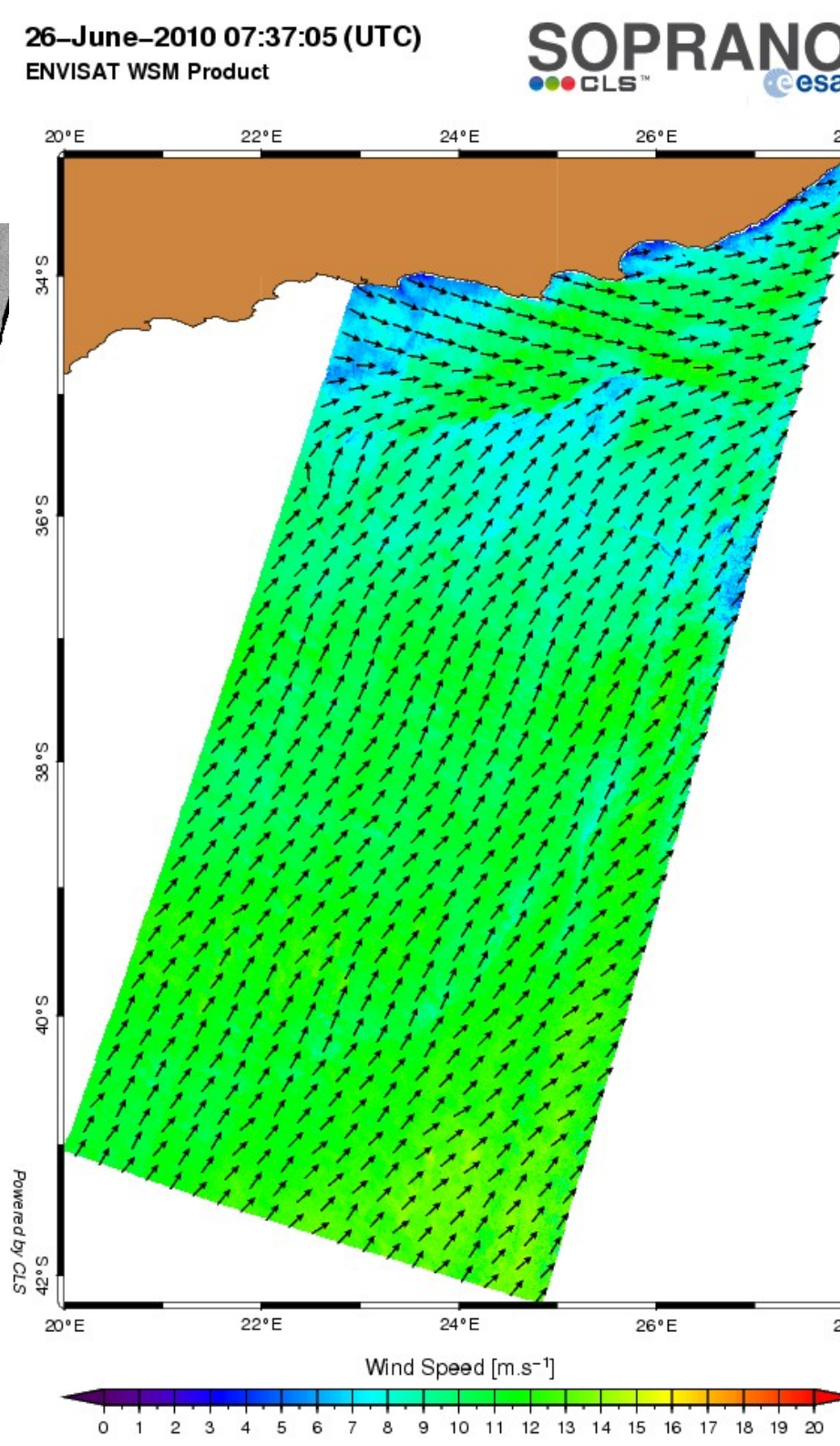


9 July 2010 07:28

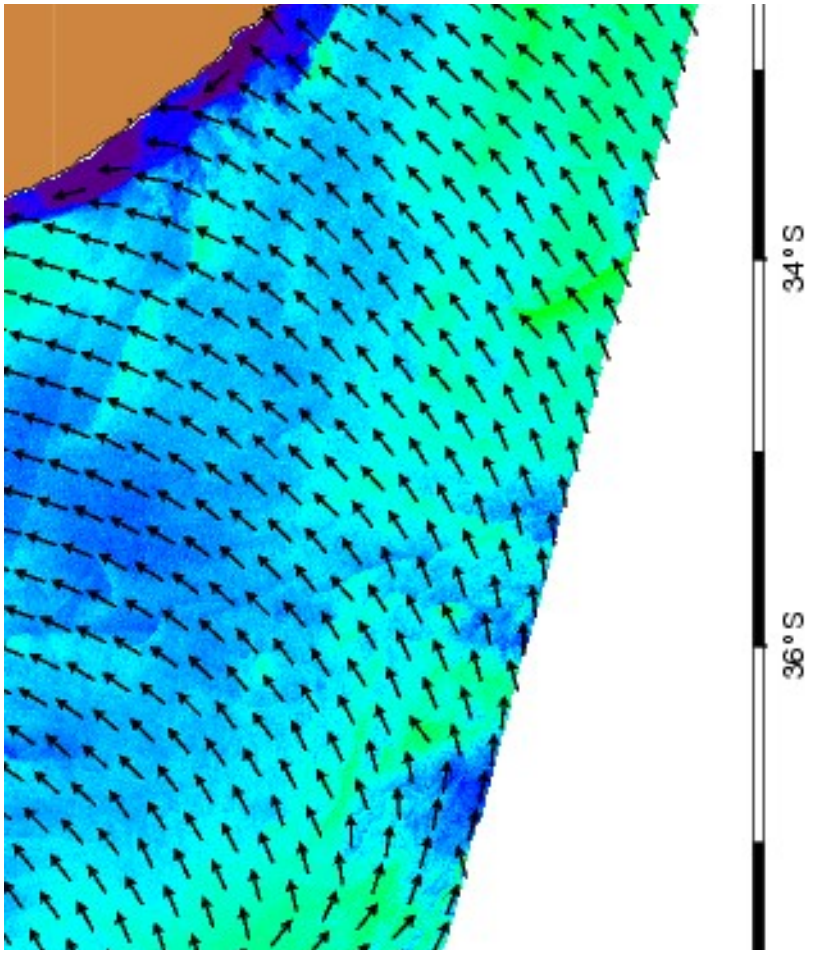


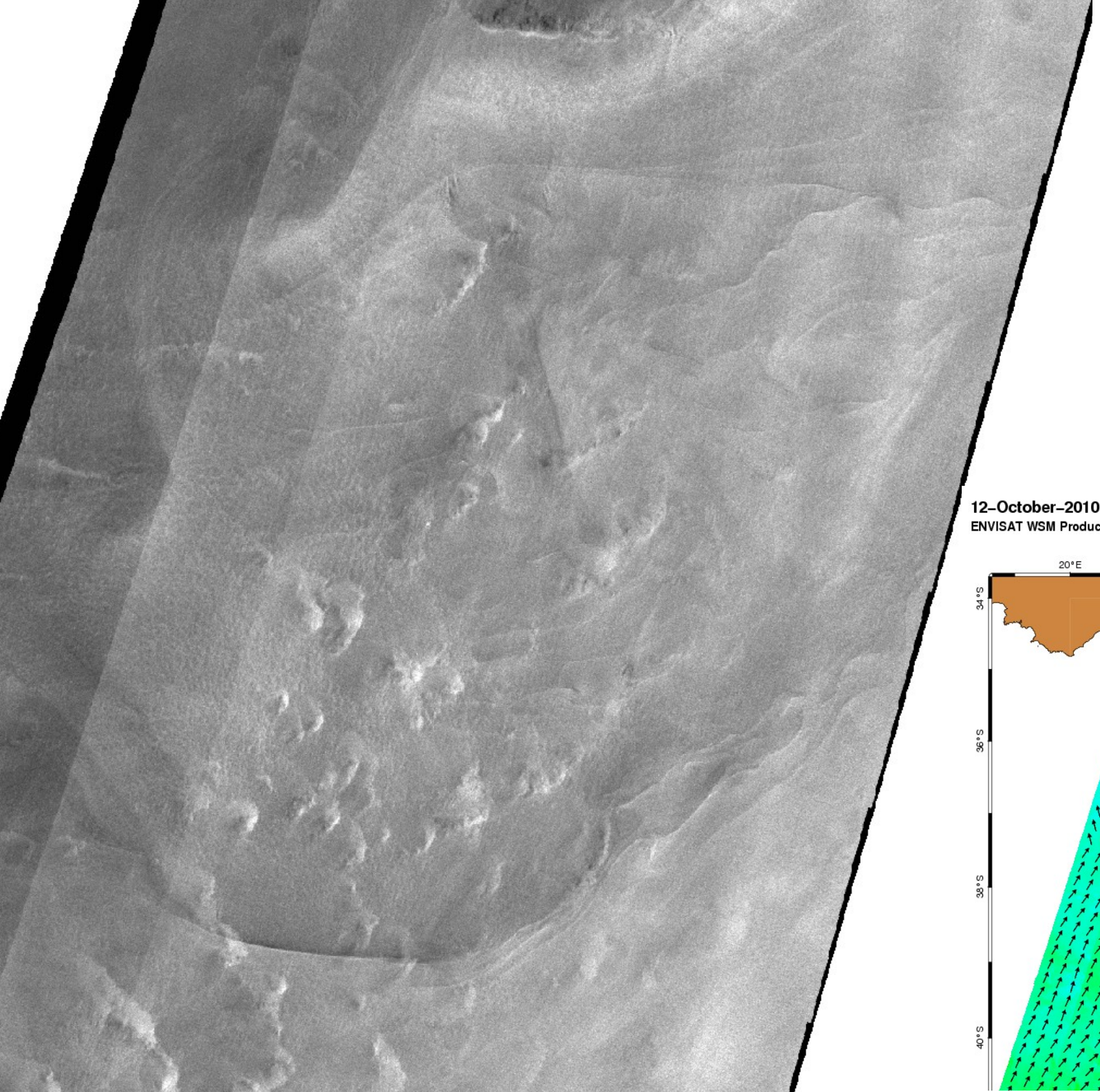





26–June–2010 07:37:05 (UTC)
ENVISAT WSM Product
SOPRANO
CLS
esa
20°E
22°E
24°E
26°E
34°S
36°S
38°S
40°S
42°S
Powered by CLS
Wind Speed [m.s⁻¹]
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

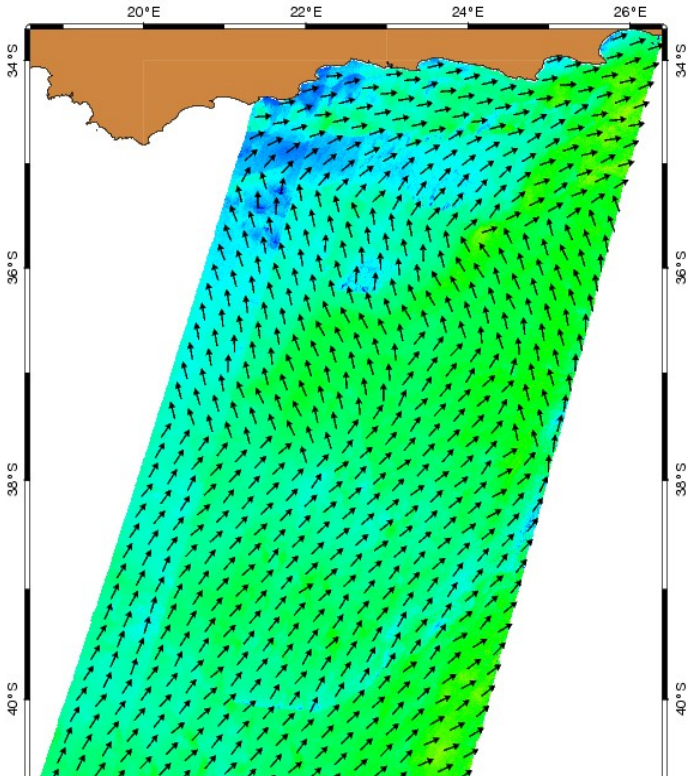
29 August 2010 07:26

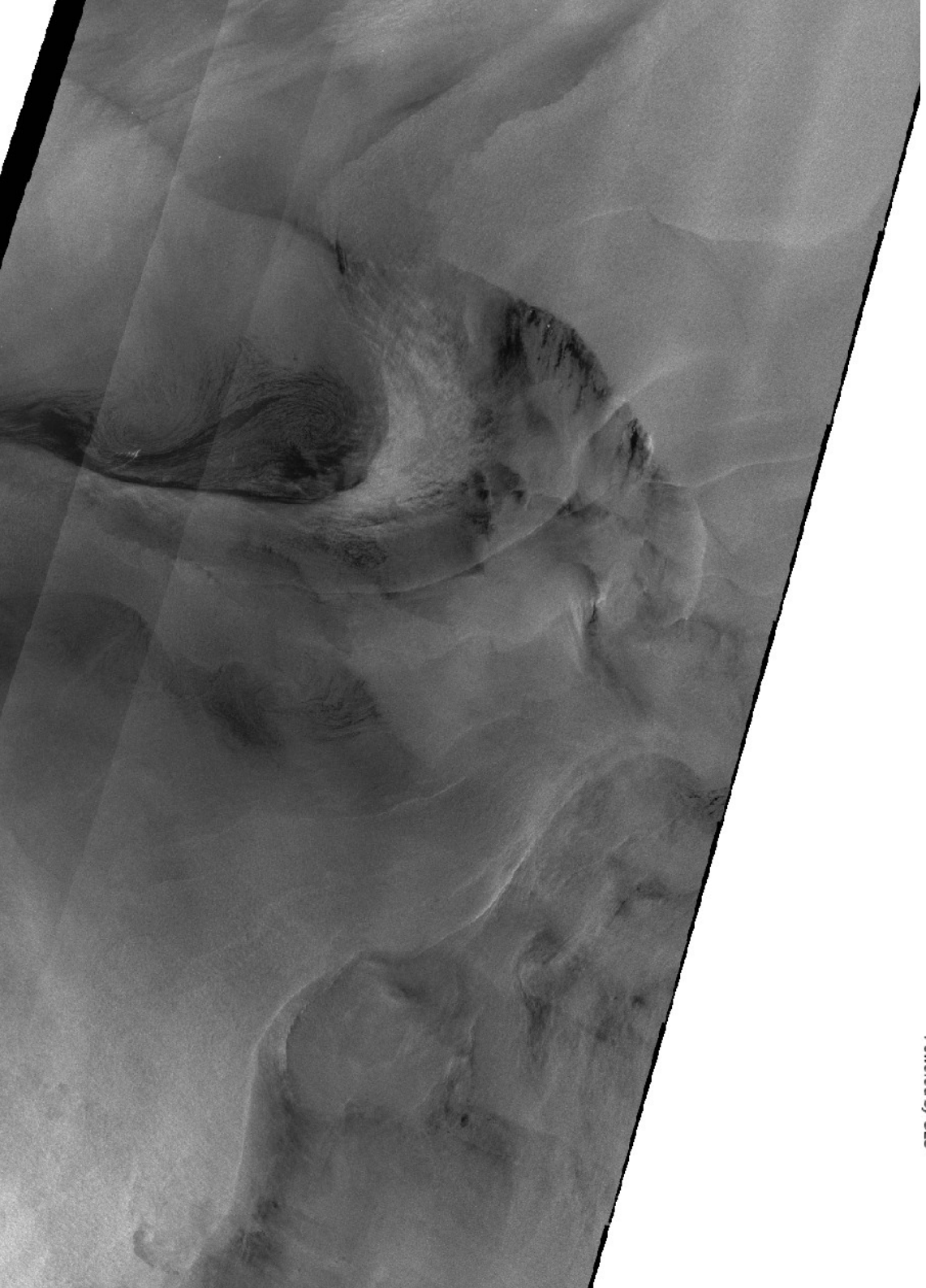


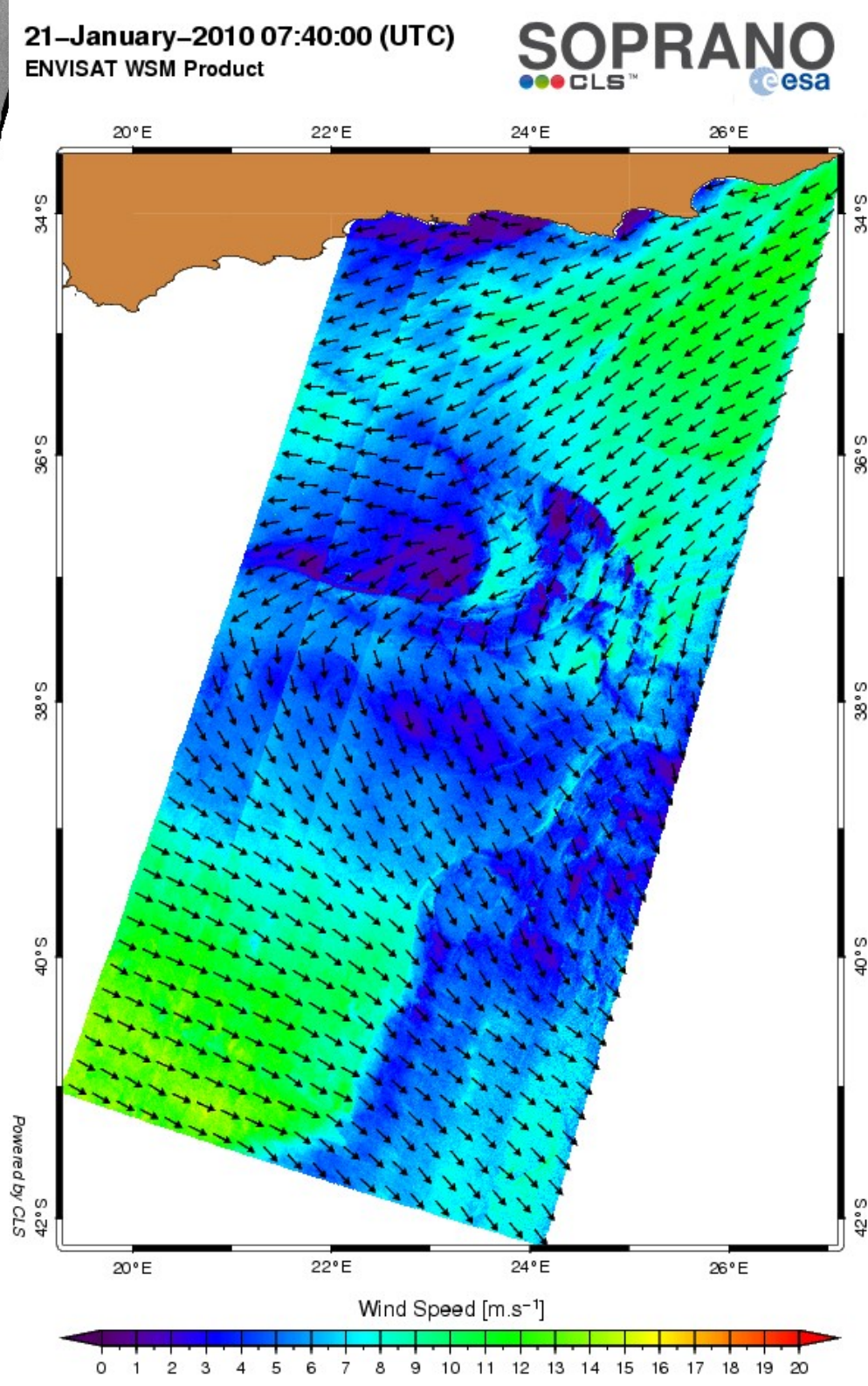


12–October–2010 07:43:06 (UTC)
ENVISAT WSM Product

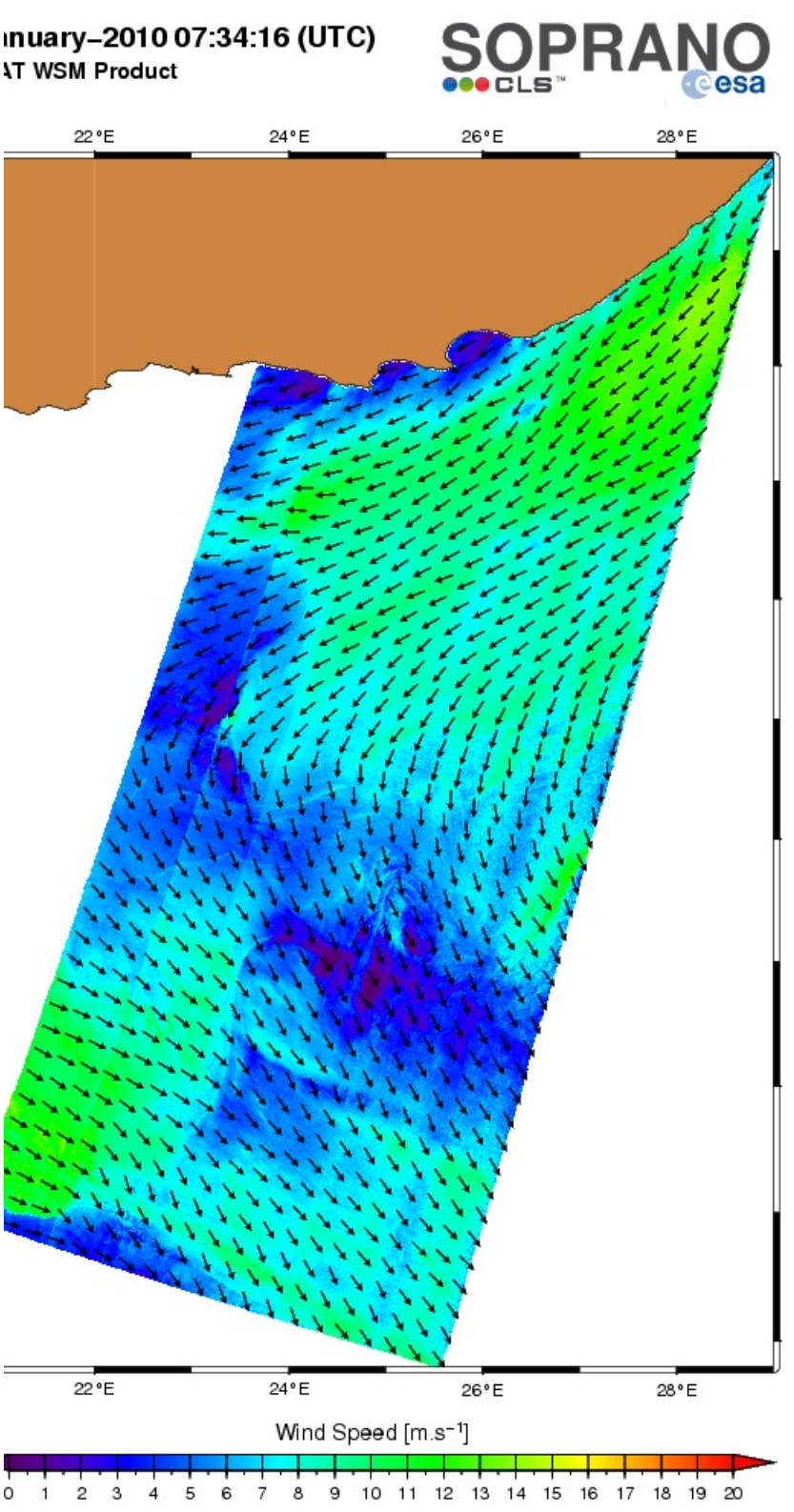
SOPRANO
CLS
esa





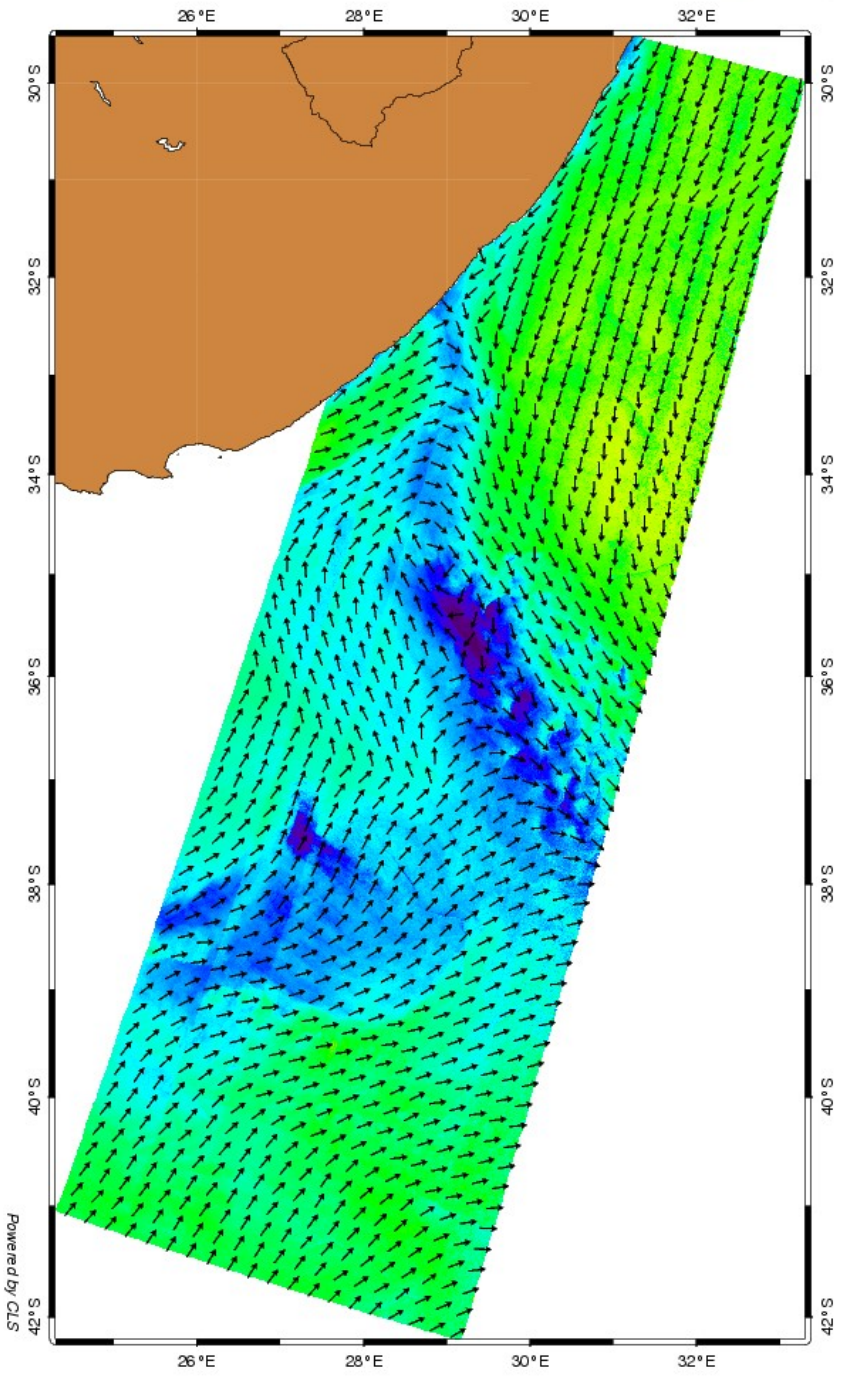

21–January–2010 07:40:00 (UTC)
ENVISAT WSM Product
SOPRANO
CLS
esa
20°E
22°E
24°E
26°E
34°S
36°S
38°S
40°S
42°S
Powered by CLS
Wind Speed [m.s⁻¹]
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20


18 January 2010 07:34

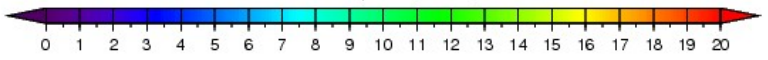

nuary–2010 07:34:16 (UTC)
AT WSM Product
SOPRANO
CLS
esa
22°E
24°E
26°E
28°E
22°E
24°E
26°E
28°E
Wind Speed [m.s⁻¹]
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

30–September–2010 07:19:48 (UTC)
ENVISAT WSM Product

SOPRANO
CLS
esa

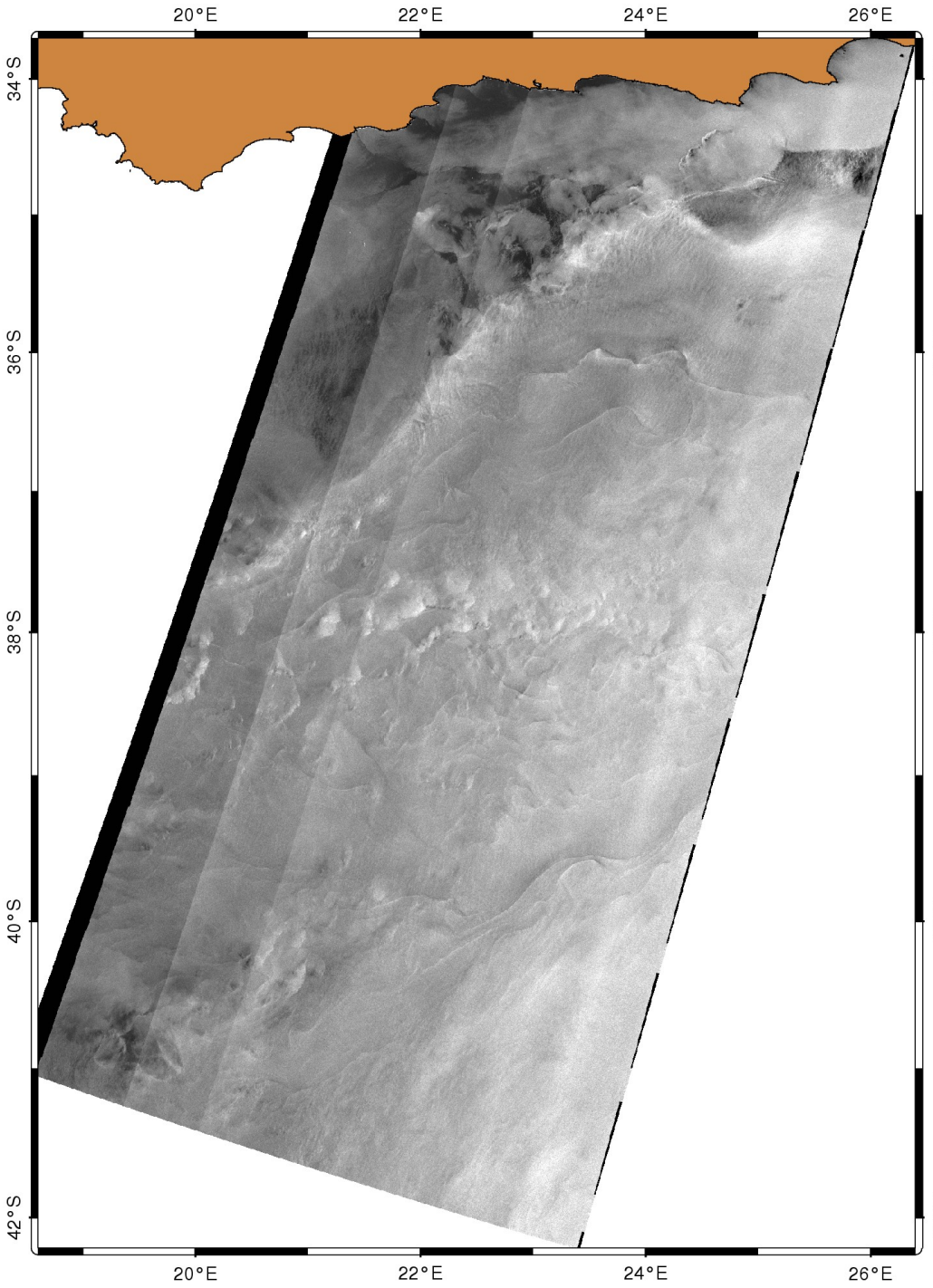


Wind Speed [m.s^{-1}]



07–September–2010 07:42:51 (UTC)
ENVISAT WSM Product

SOPRANO CLS™ esa



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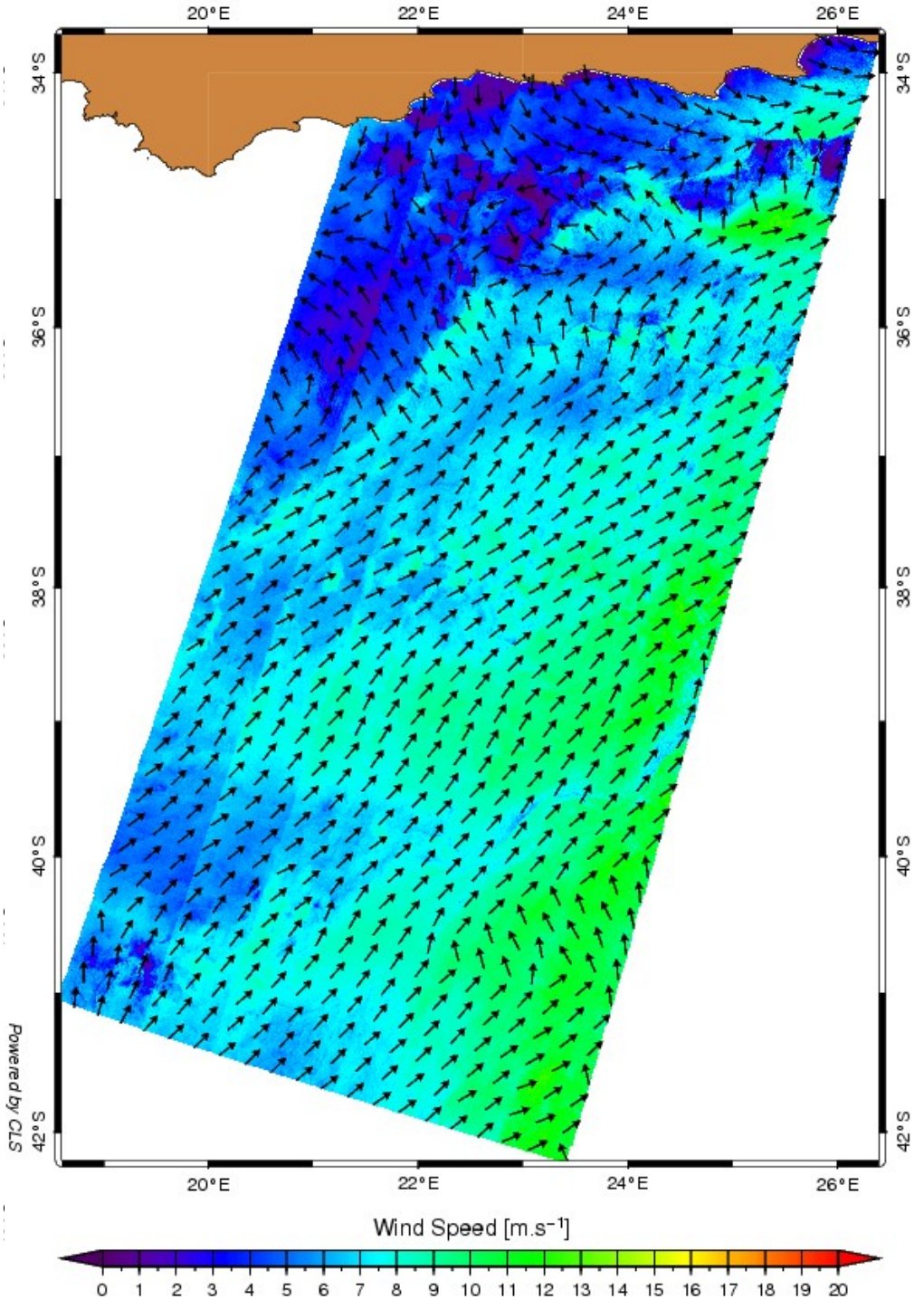
ENVISAT WSM Product

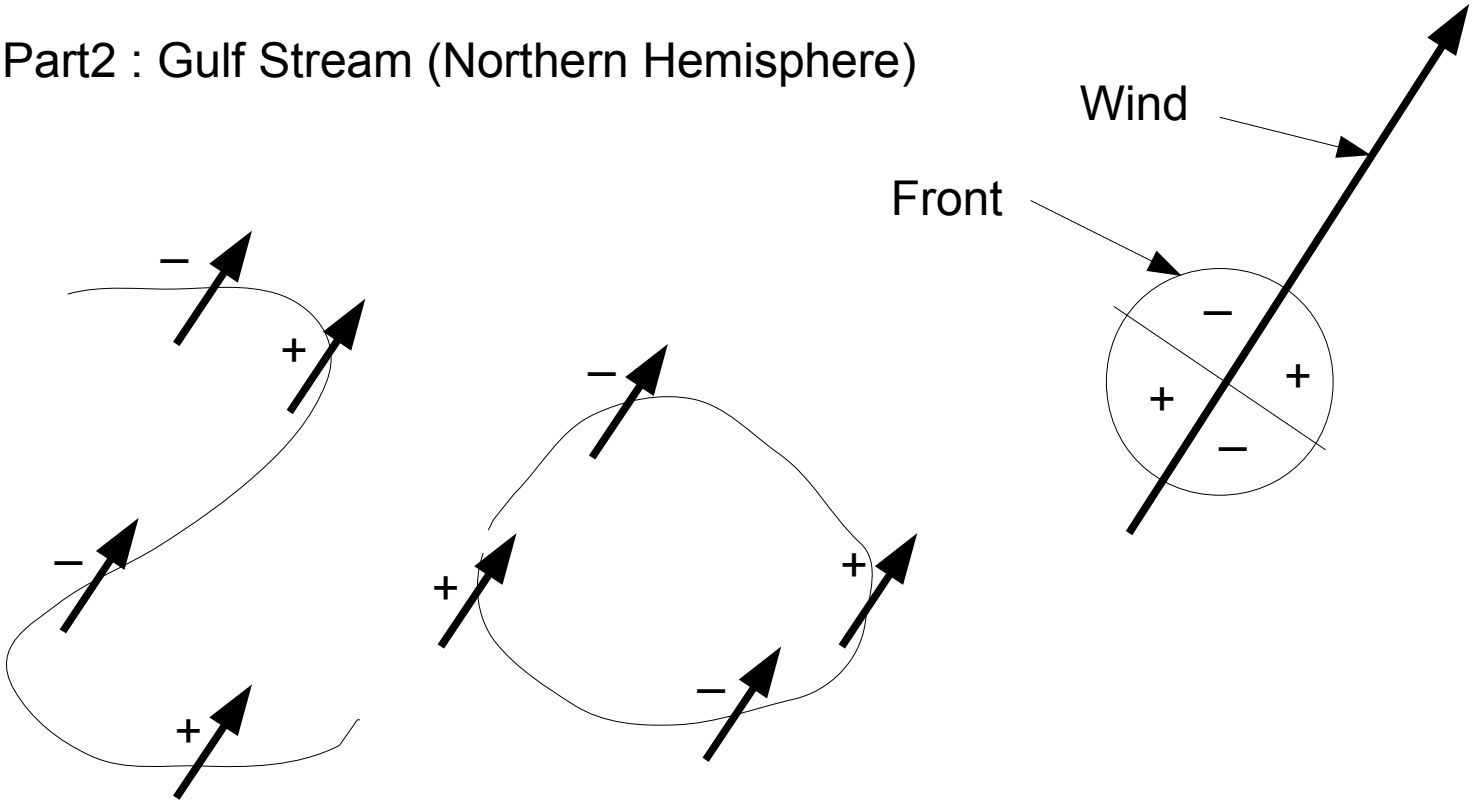
SOPRANO CLS™ esa

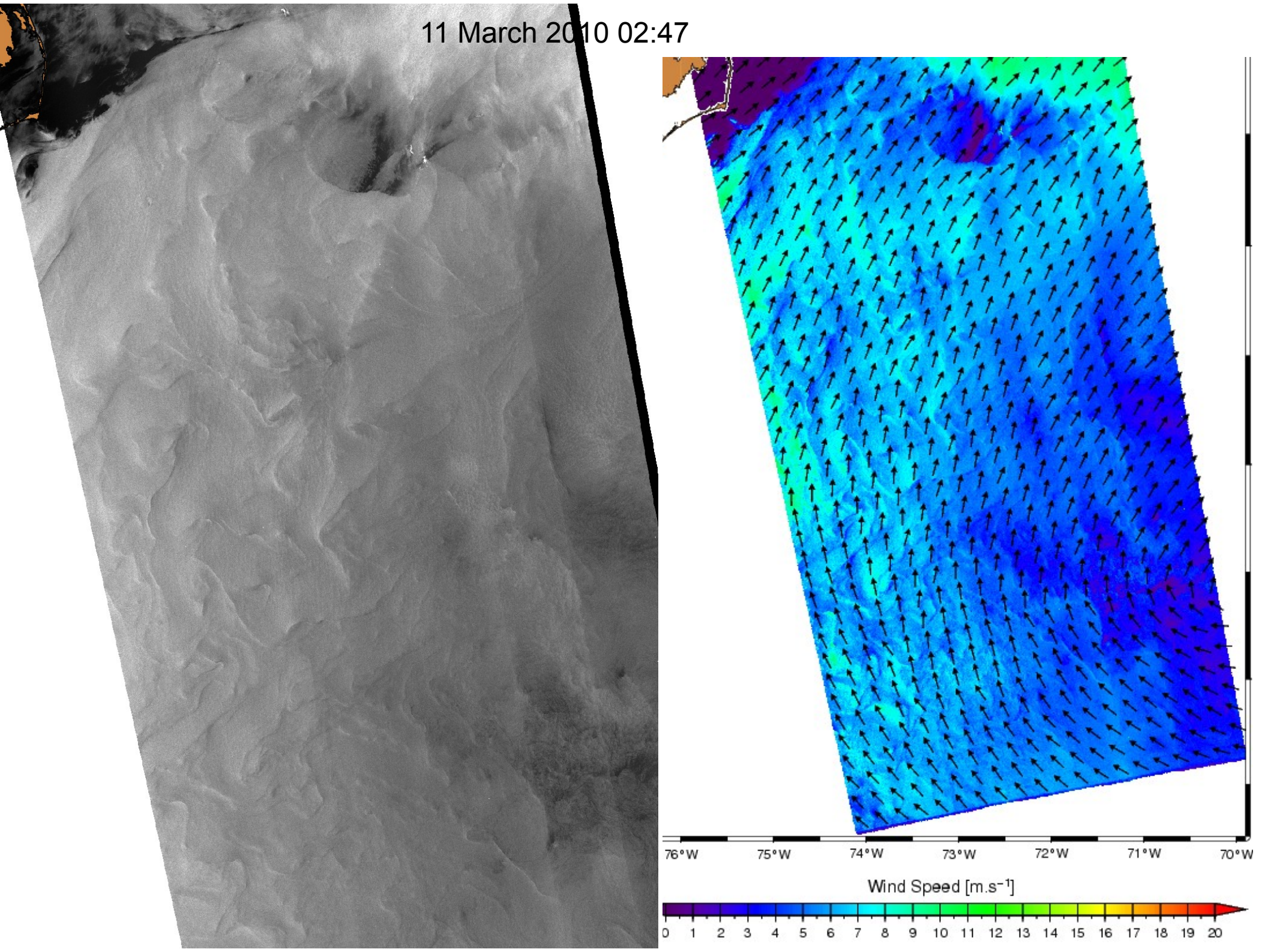


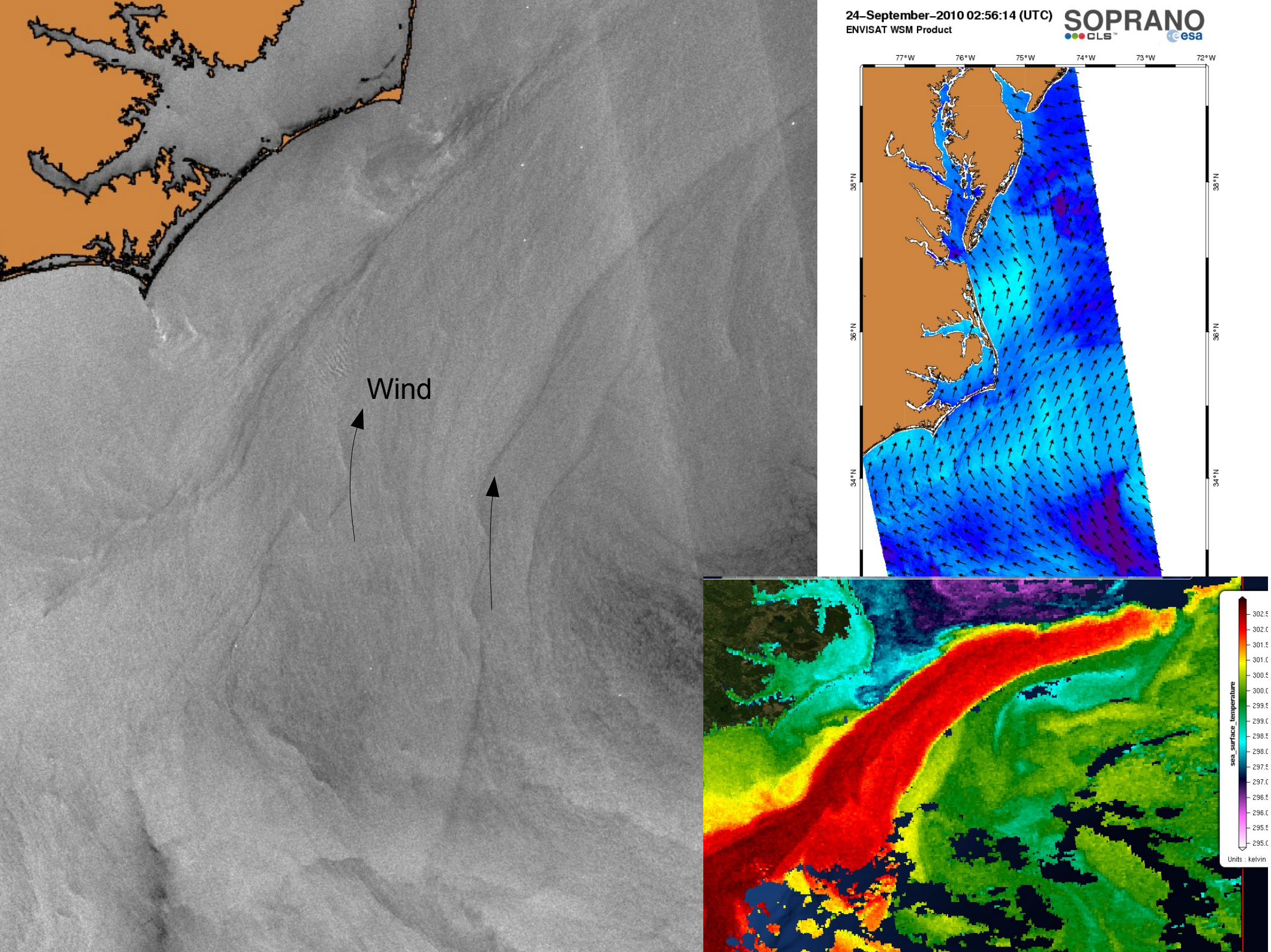
Meso/submeso-scale convergence and divergence at frontal zone

Observations of enhancement (+) or reduction (-) of roughness depending on angle between front and wind. Apparent independance of SST gradient sign or current shear sign

Part2 : Gulf Stream (Northern Hemisphere)

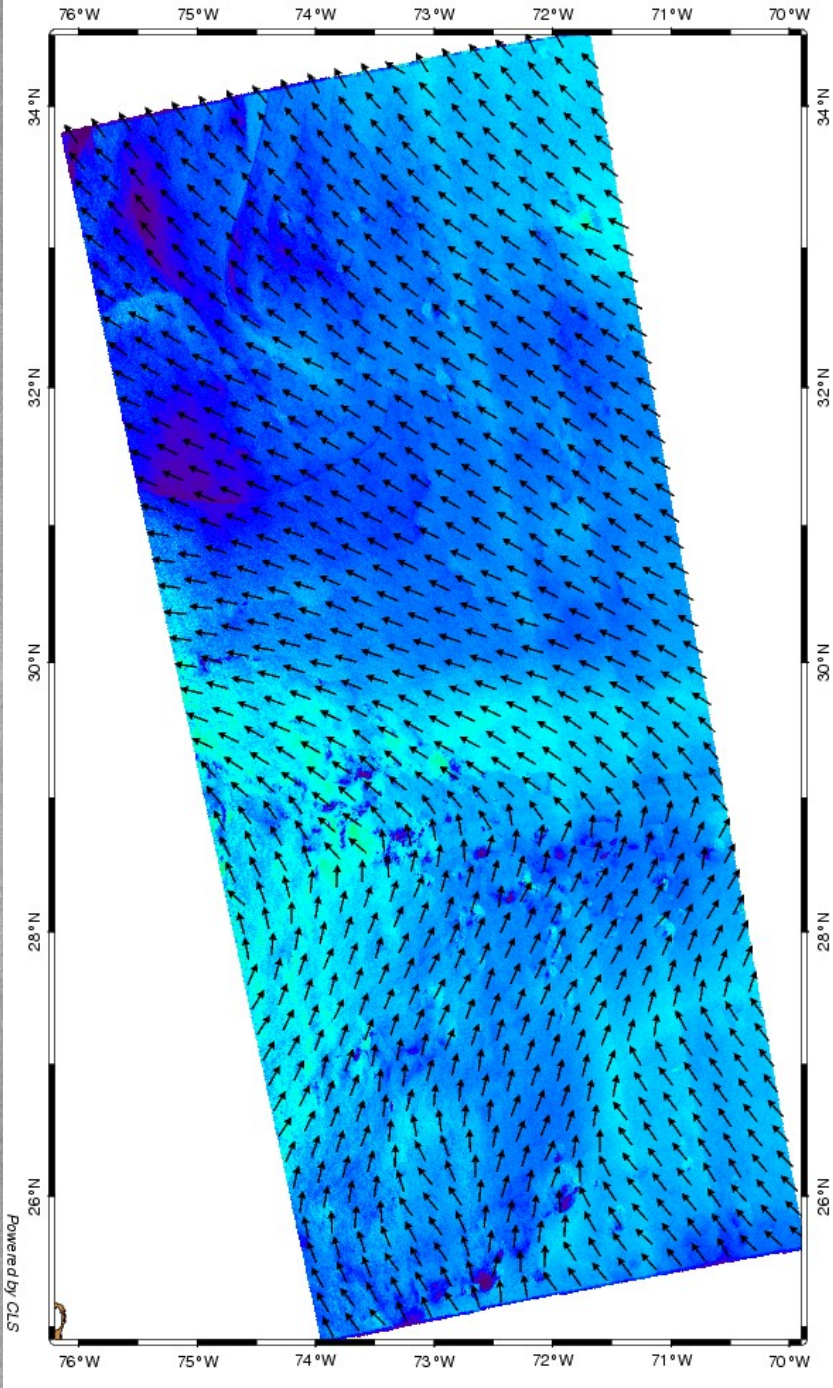



11 March 2010 02:47
76°W
75°W
74°W
73°W
72°W
71°W
70°W
Wind Speed [m.s⁻¹]
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20


24–September–2010 02:56:14 (UTC)
ENVISAT WSM Product
SOPRANO
CLS
esa
77°W
76°W
75°W
74°W
73°W
72°W
38°N
36°N
34°N
Wind
sea_surface_temperature
Units : kelvin

17–August–2010 02:49:11 (UTC)
ENVISAT WSM Product

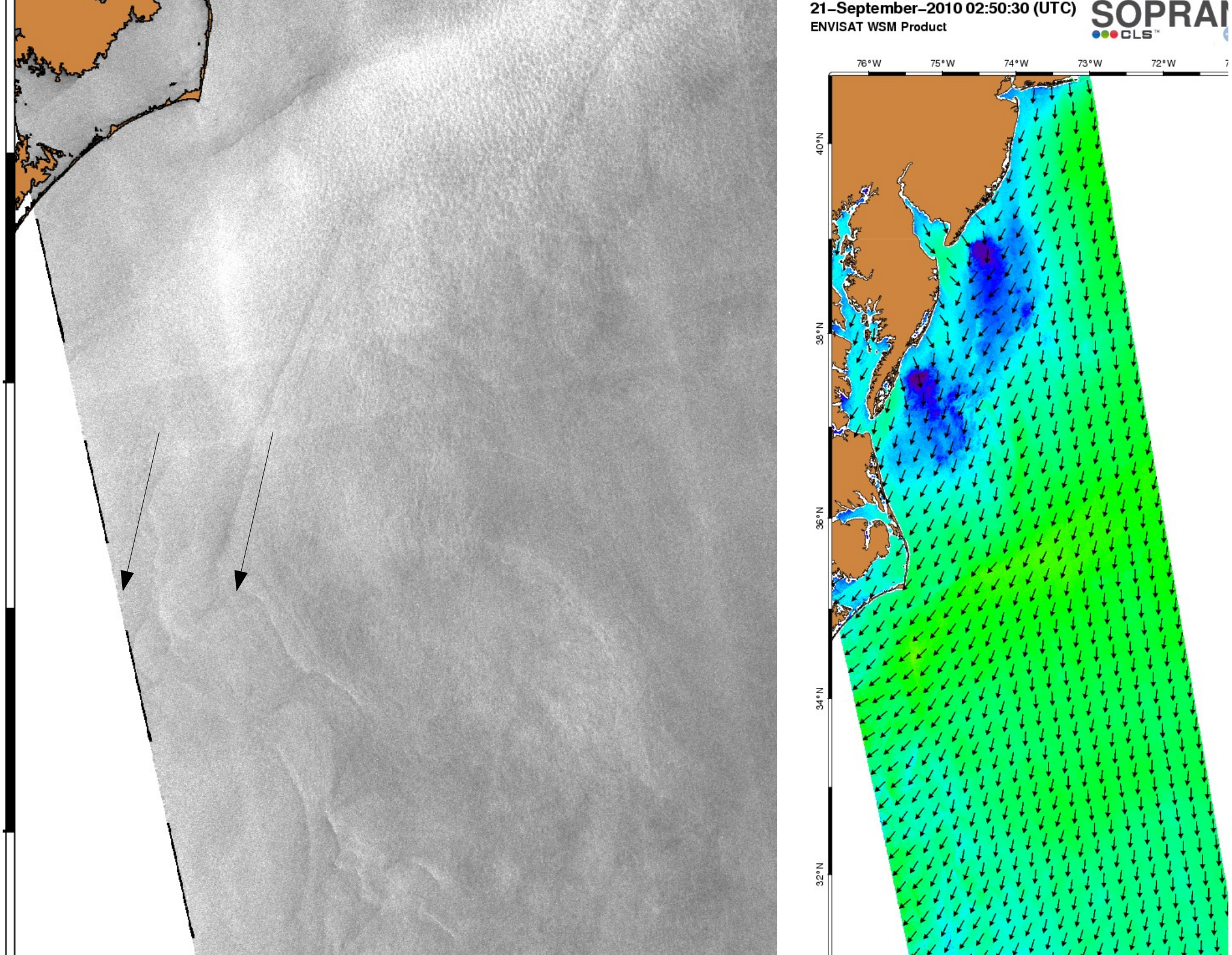
SOPRANO
CLS
esa



Powered by CLS

Wind Speed [m.s^{-1}]

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20


21–September–2010 02:50:30 (UTC)
ENVISAT WSM Product
SOPRAN
CLS
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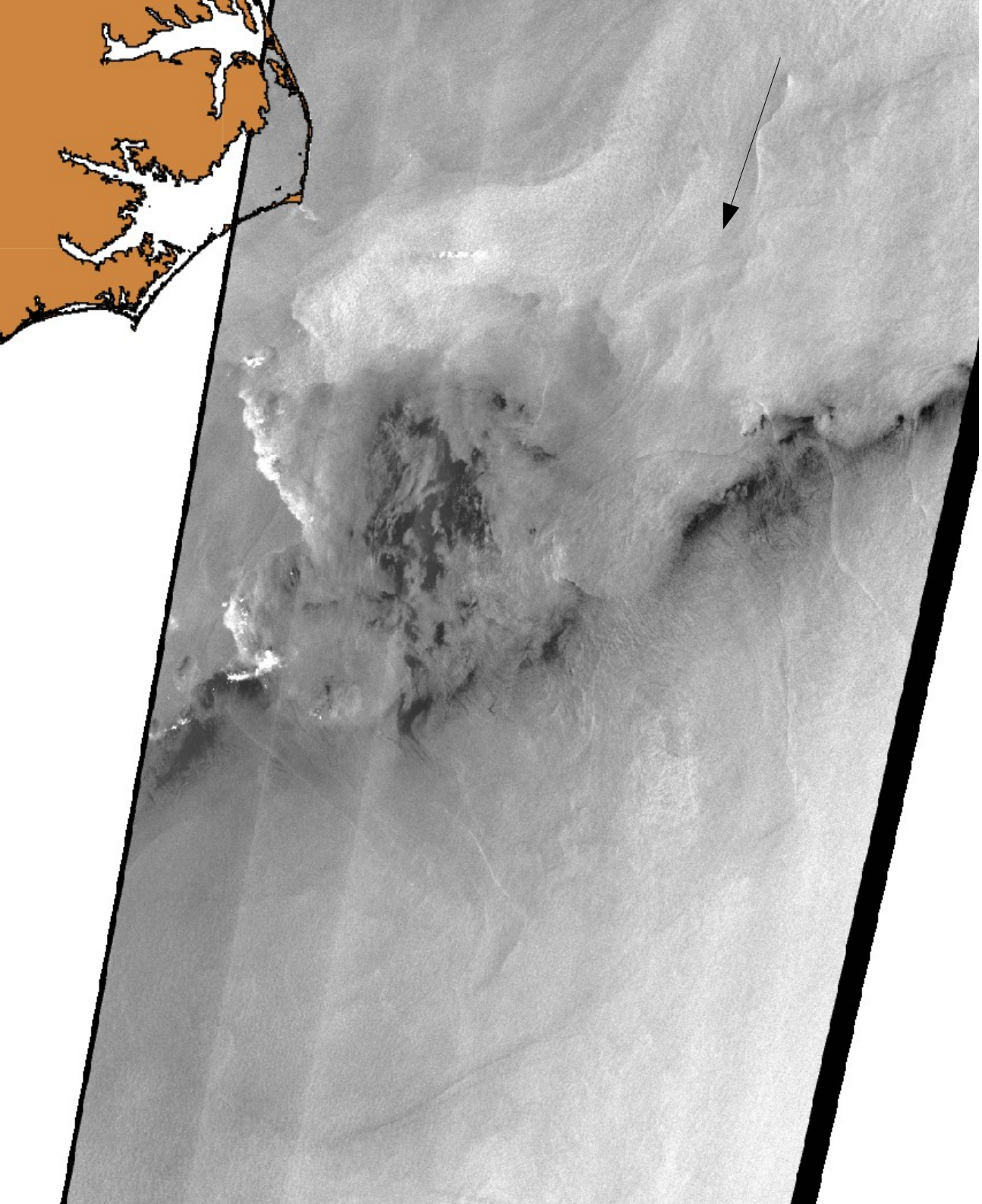
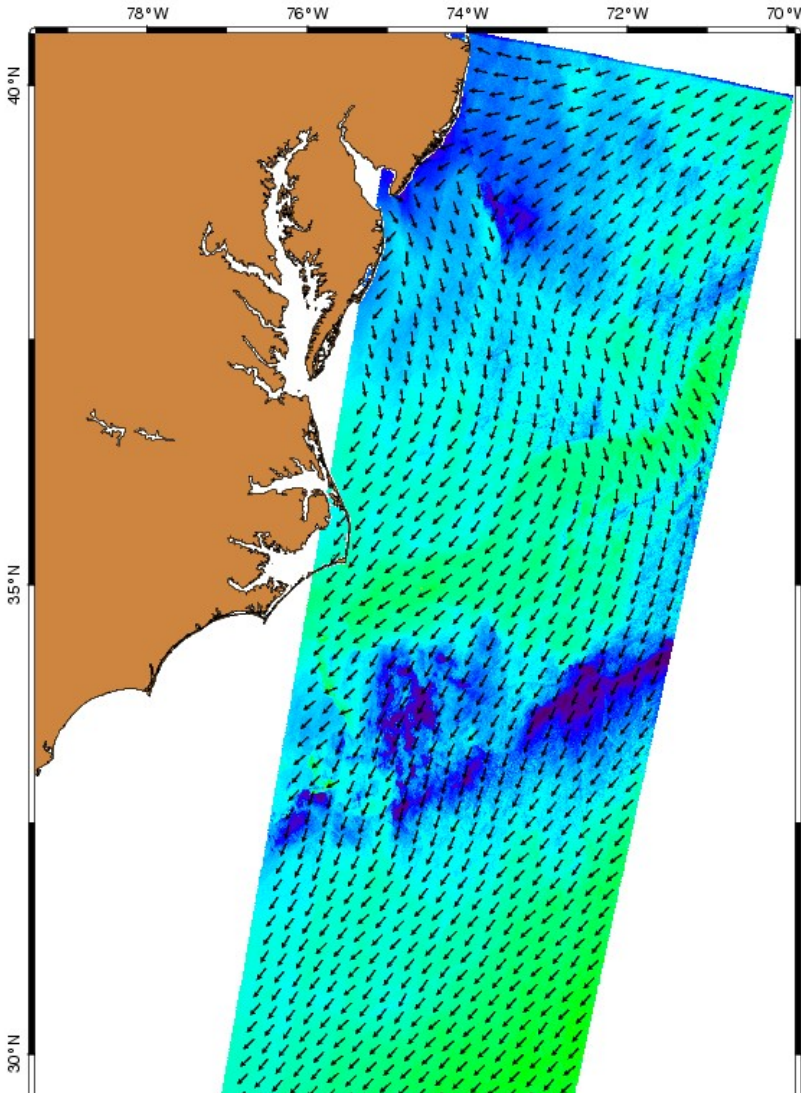
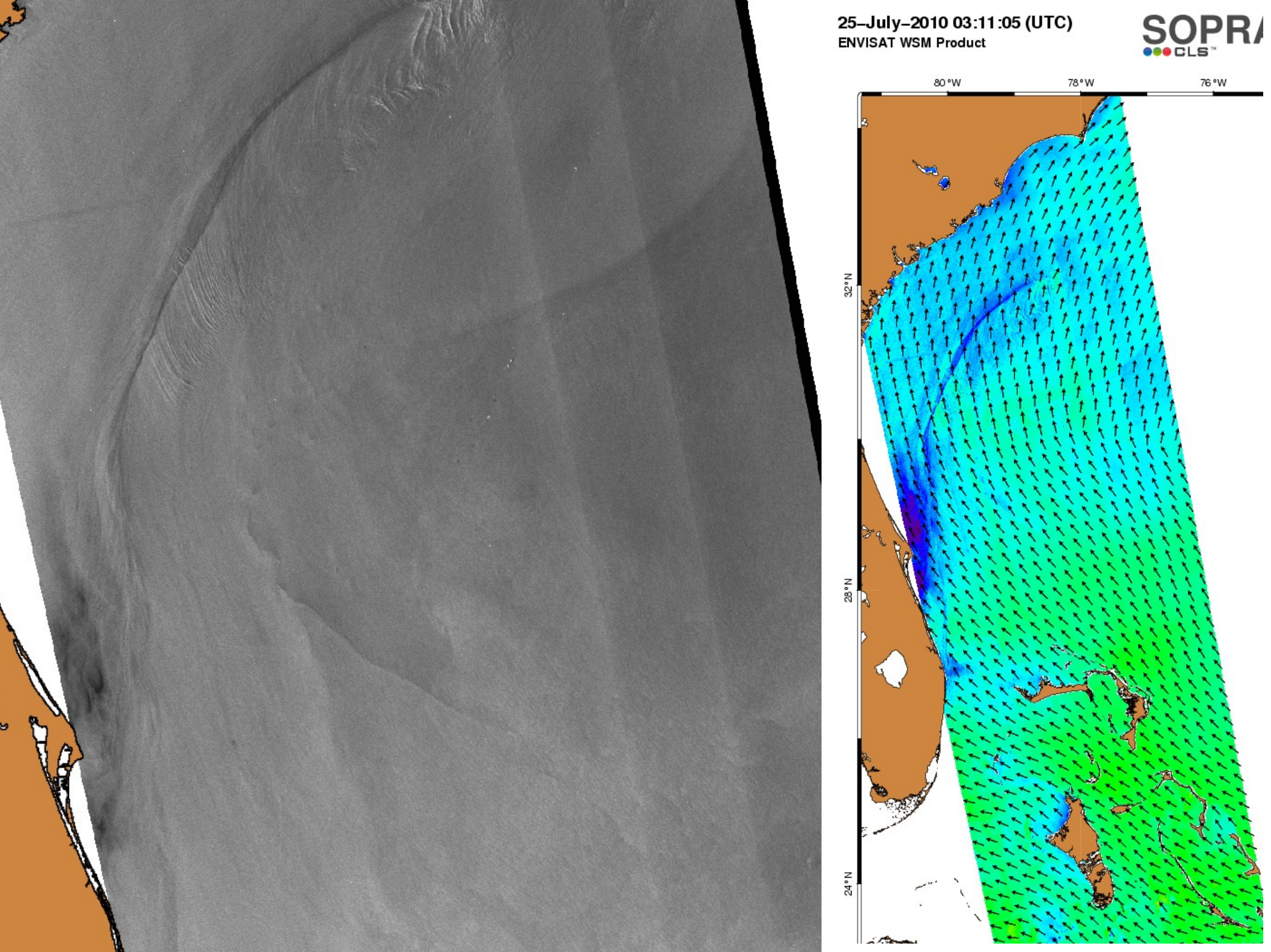
75°W
74°W
73°W
72°W
40°N
38°N
36°N
34°N
32°N

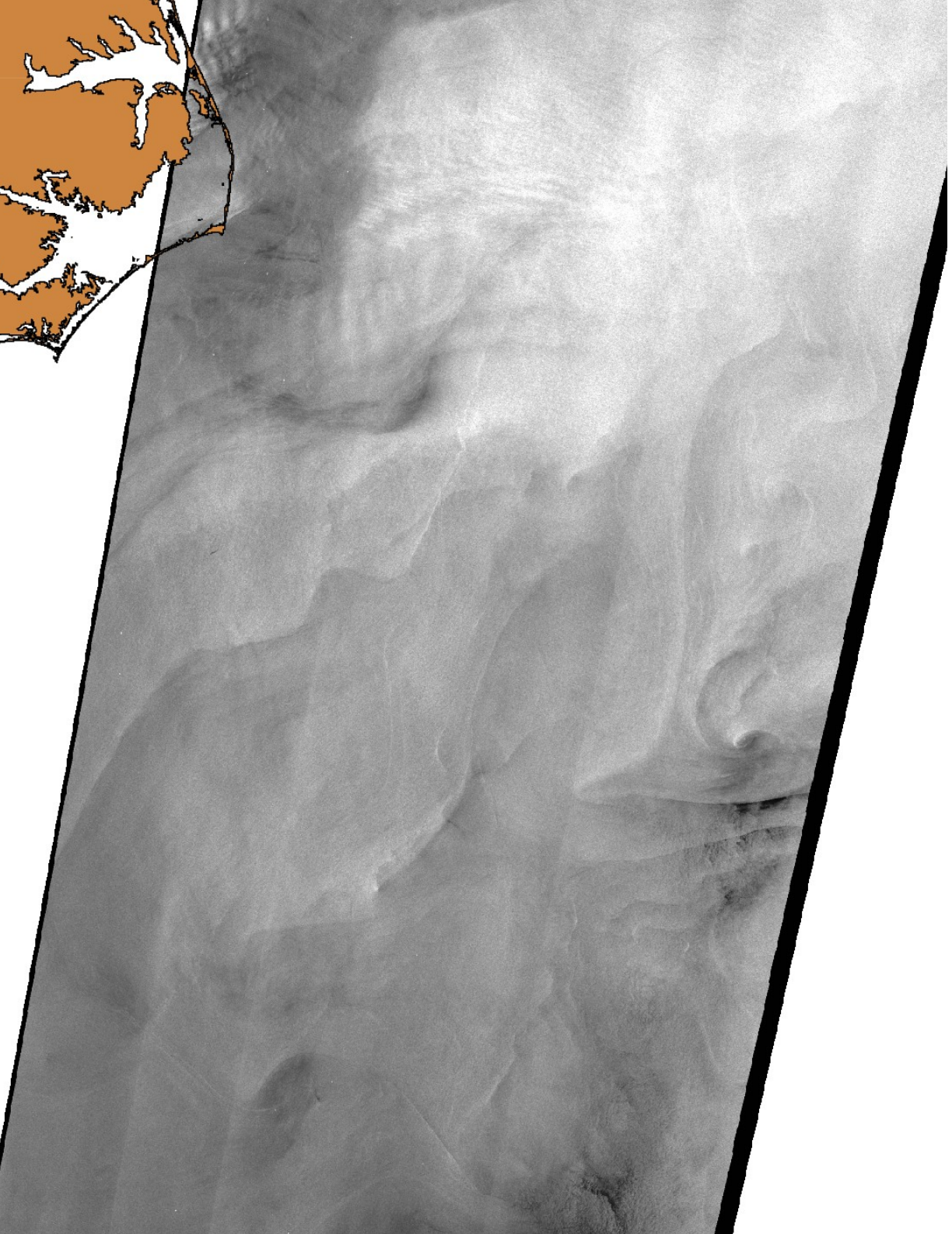


18–September–2010 15:02:43 (UTC)
ENVISAT WSM Product

SOPRANO
CLS
esa

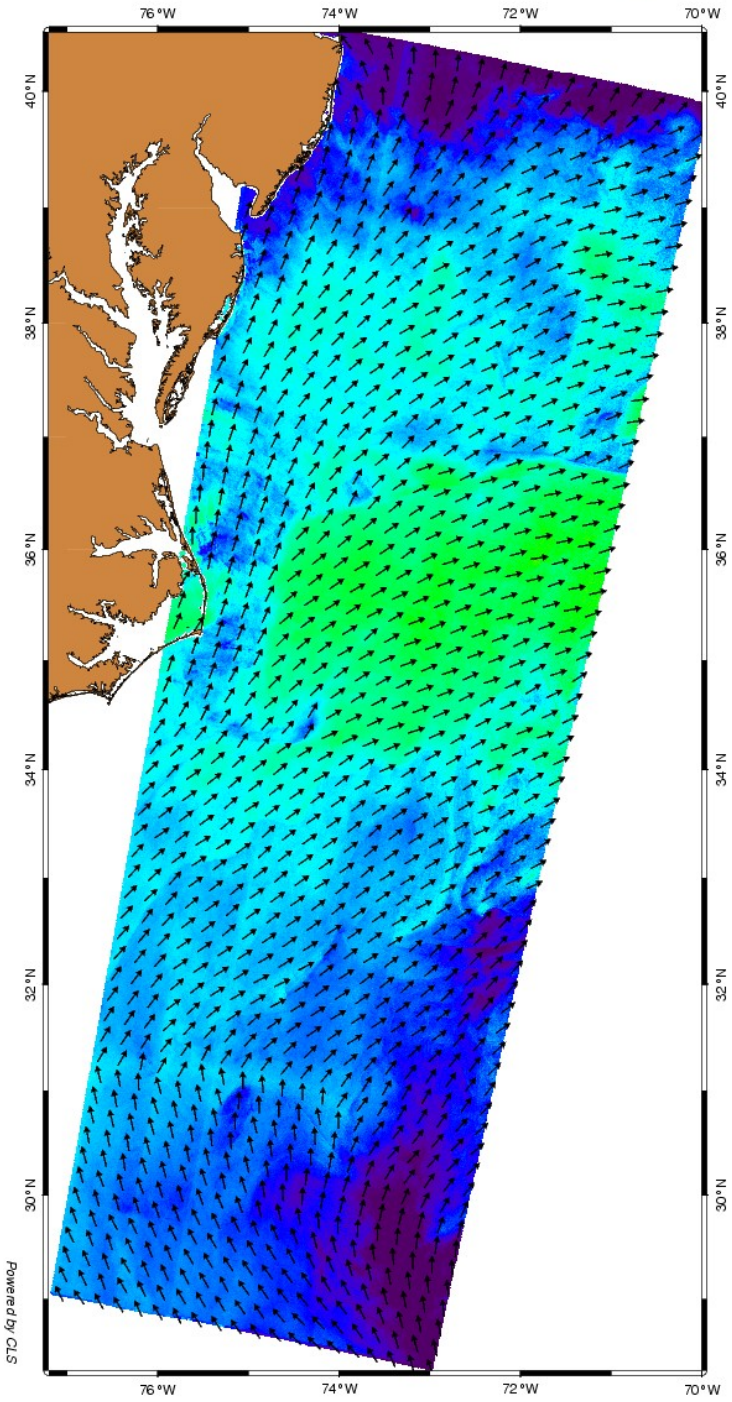



25–July–2010 03:11:05 (UTC)
ENVISAT WSM Product
SOPRA
CLS
80 °W
78 °W
76 °W
32 °N
28 °N
24 °N



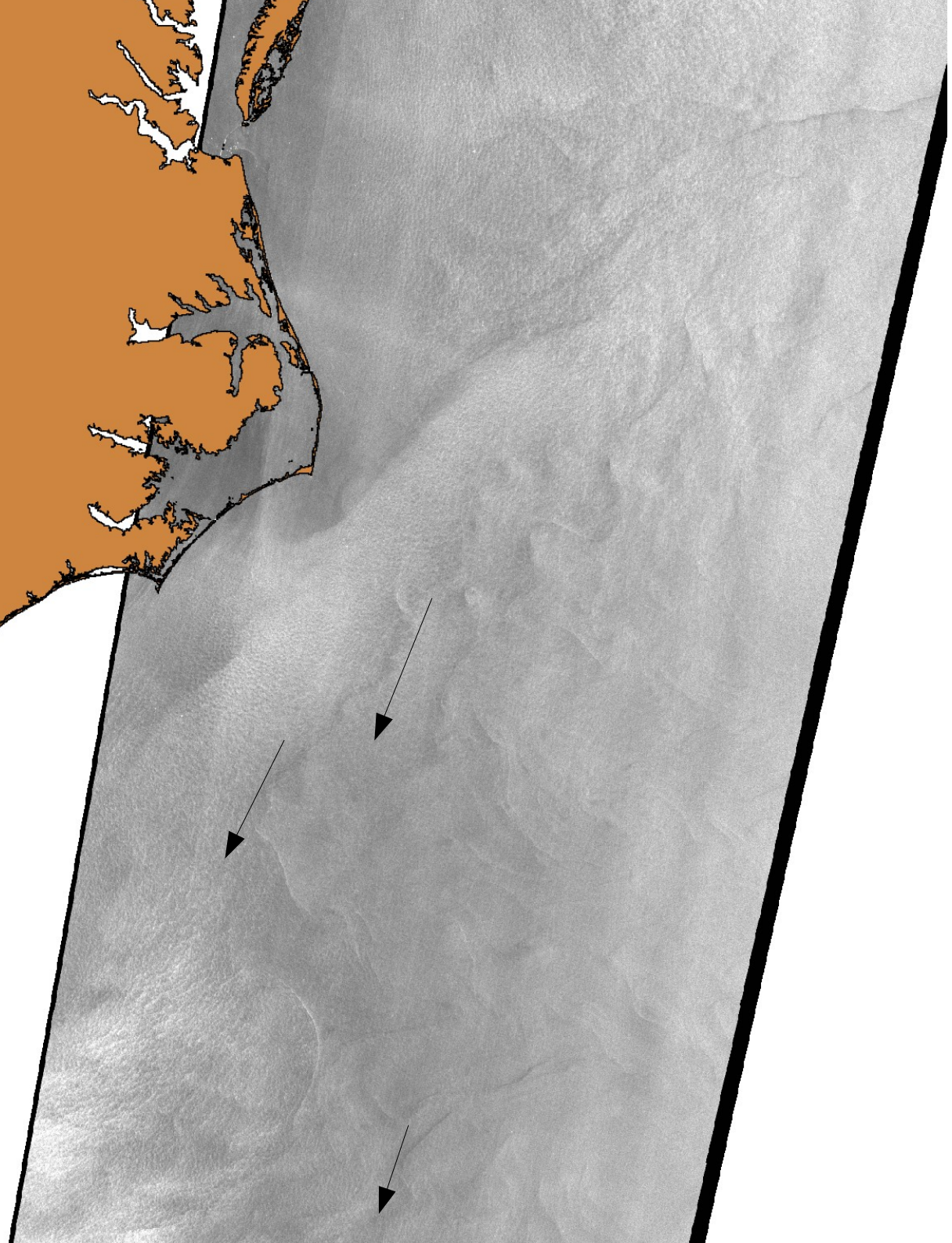
01–May–2010 15:00:12 (UTC)
ENVISAT WSM Product

SOPRANO
CLS
esa



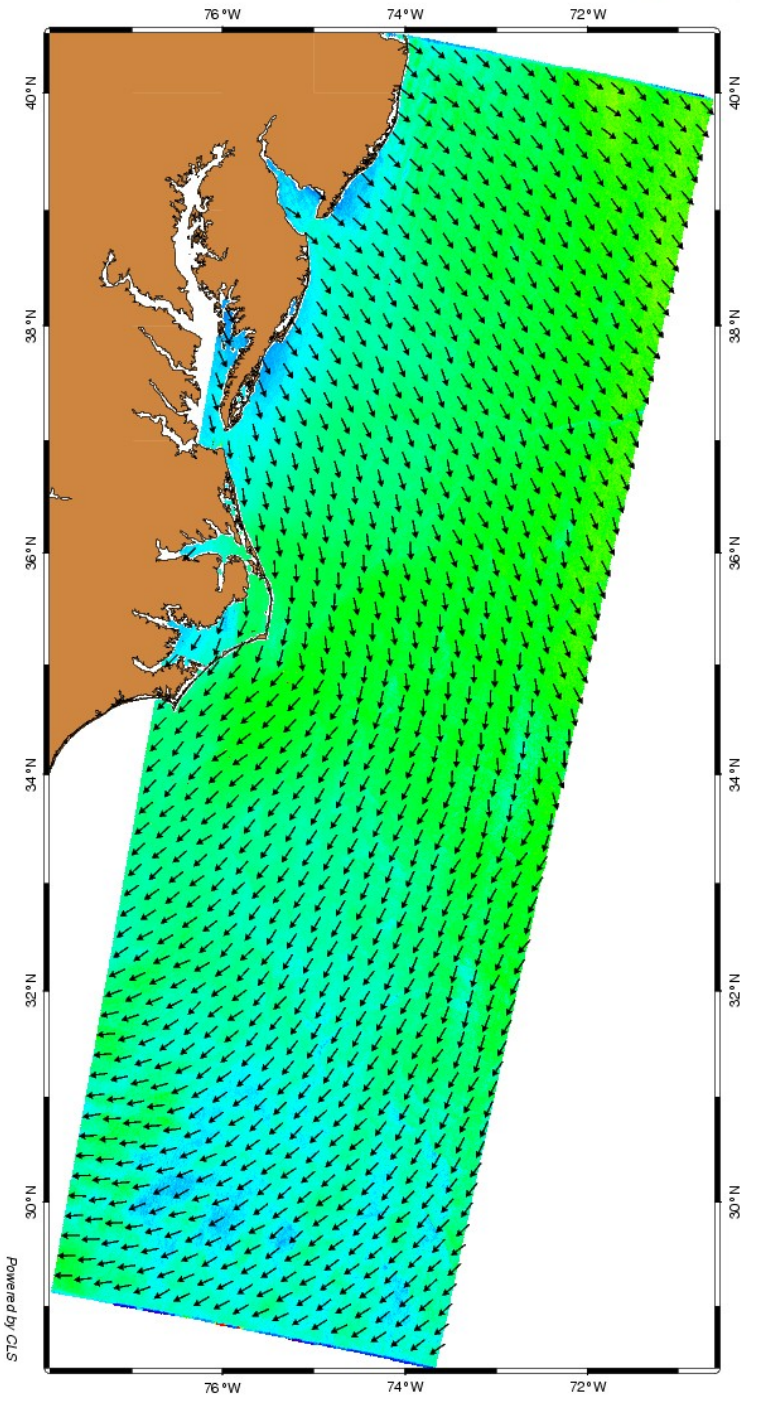
Wind Speed [m.s^{-1}]

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20



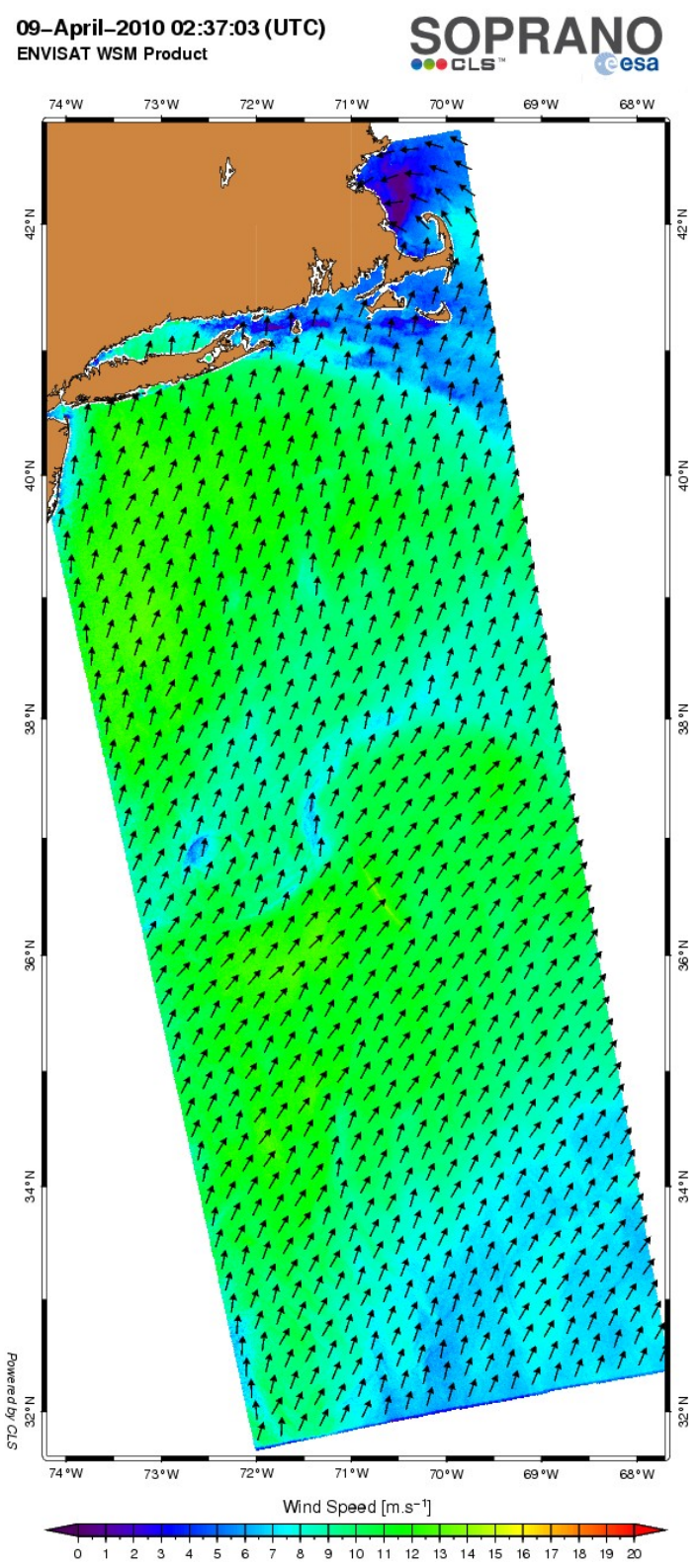
04–February–2010 15:03:05 (UTC)
ENVISAT WSM Product

SOPRANO
CLS
esa



Wind Speed [m.s⁻¹]

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20


09–April–2010 02:37:03 (UTC)
ENVISAT WSM Product
SOPRANO
CLS
esa
74°W
73°W
72°W
71°W
70°W
69°W
68°W
42°N
40°N
38°N
36°N
34°N
32°N
Powered by CLS
Wind Speed [m.s⁻¹]
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

General observations :

- Modulation of backscatter at front better observed under wind direction near azimuth (Eckman current near range direction)
- General alternance of enhanced/reduced backscatter depending on wind/front direction with pi periodicity
- Sign of backscatter modulation independant of SST gradient sign (slide 14)
- Scheme fully reversed in southern hemisphere (Coriolis)

13 January 2010 20:46

Cherry on the cake : the cold tongue