

Extreme wave height events in Algarve (Portugal): comparison between HF radar system, wave buoy and Copernicus Model

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Vento



Windy.com

16:00



Sexta 8

Sábado 9

Domingo

km/h

0

10

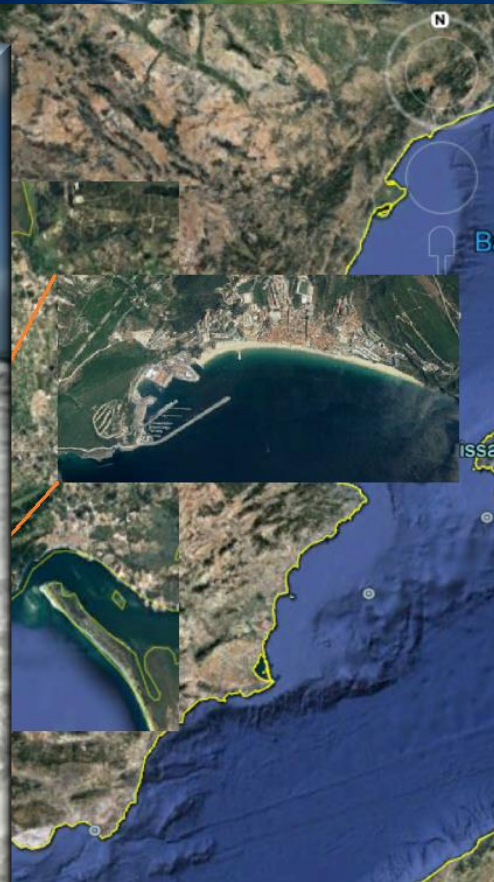
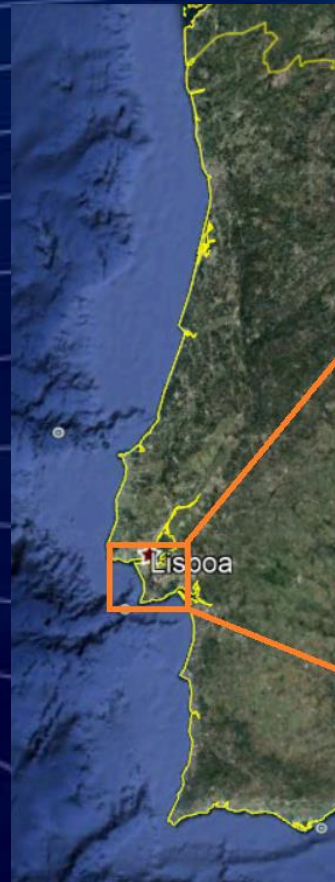
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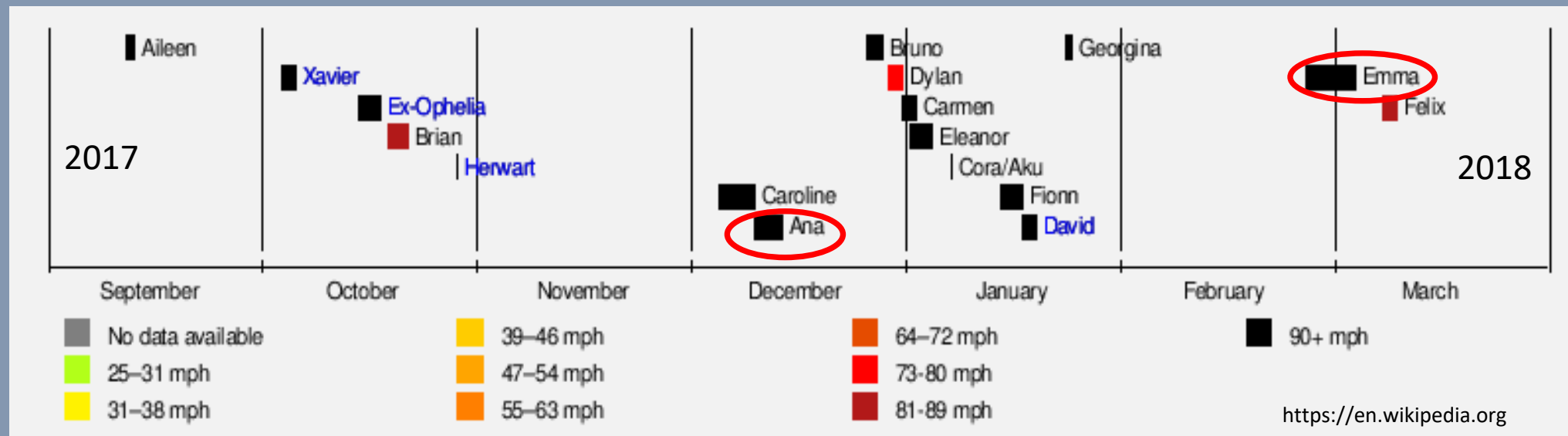
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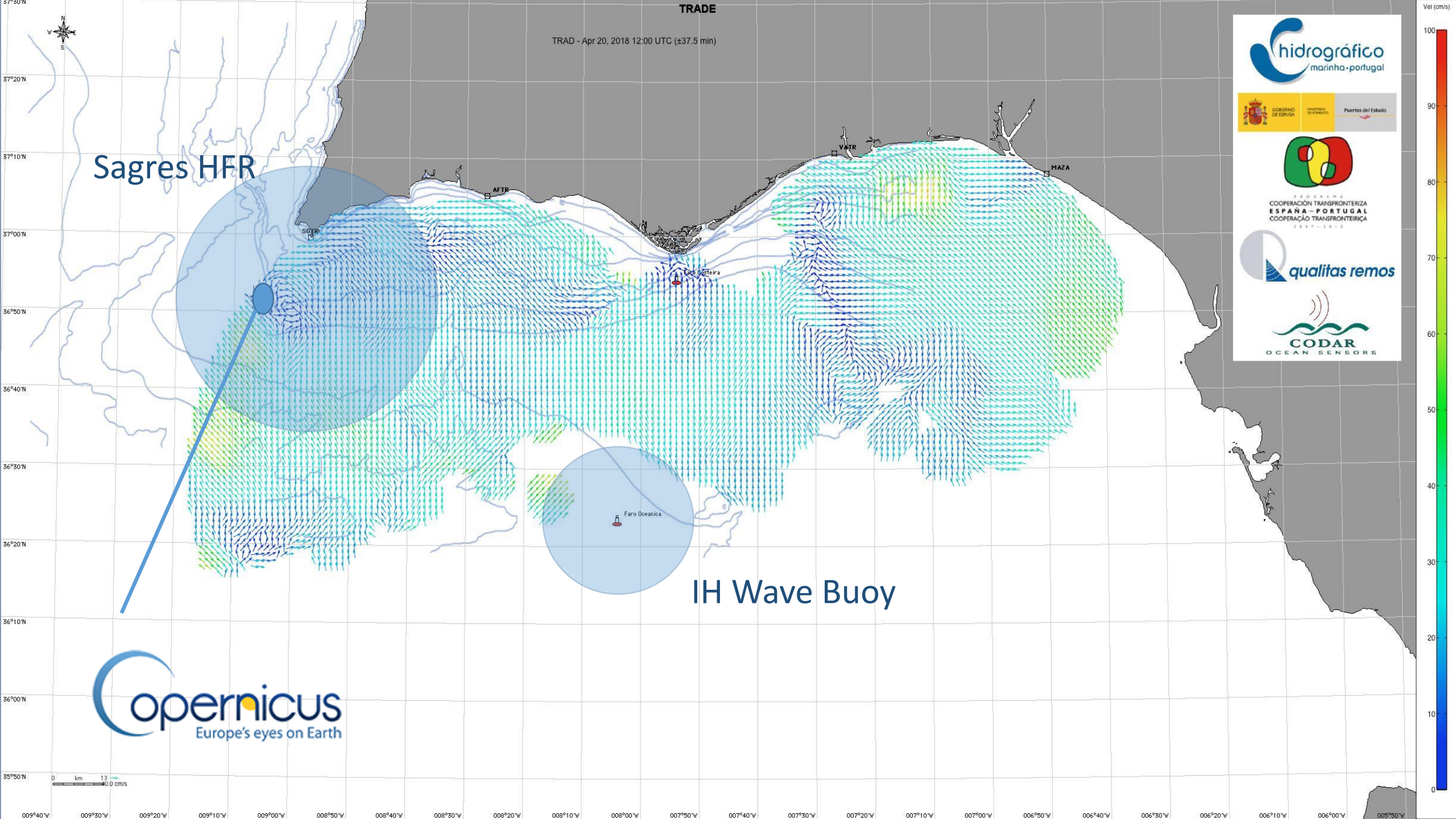
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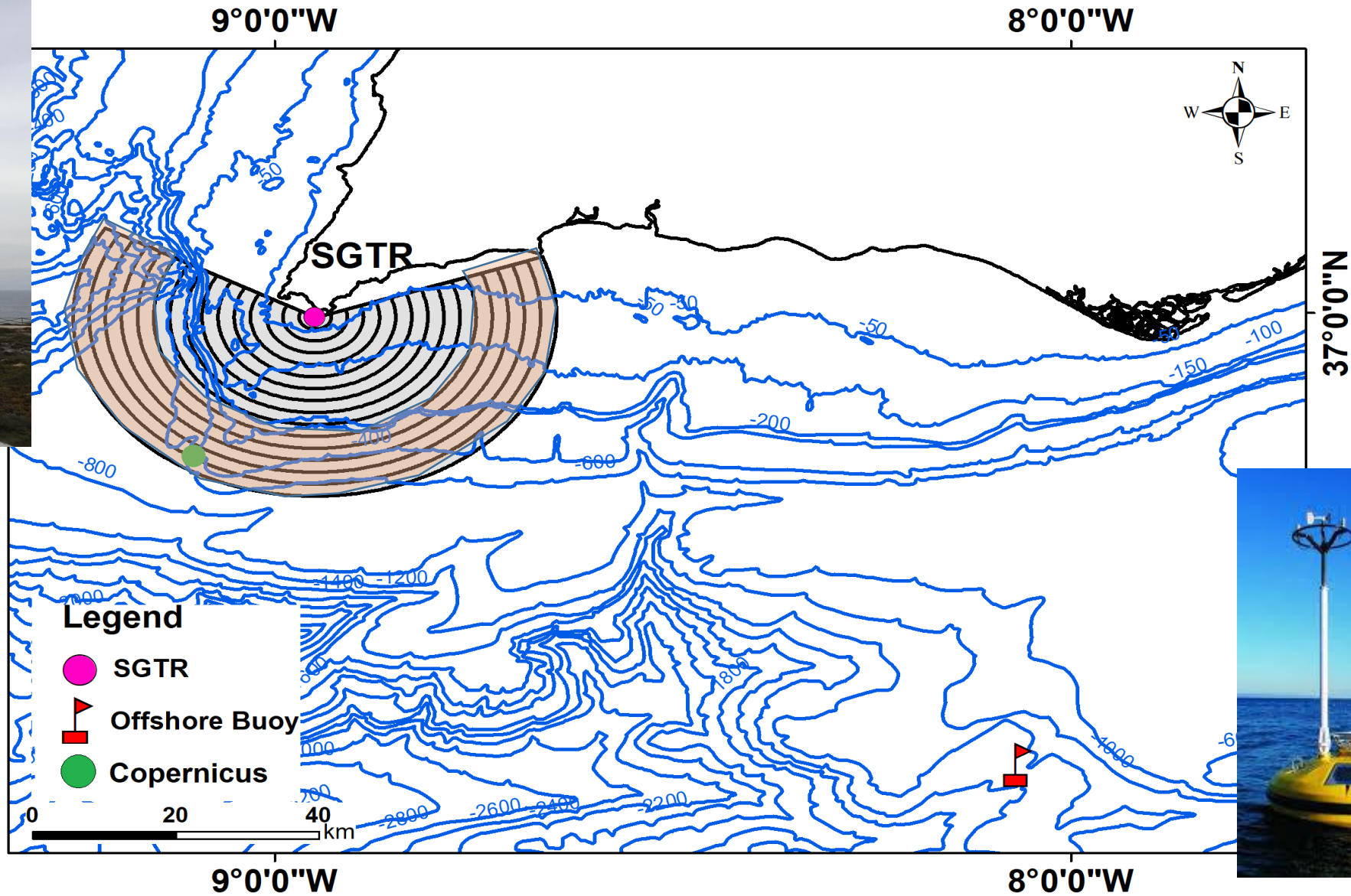


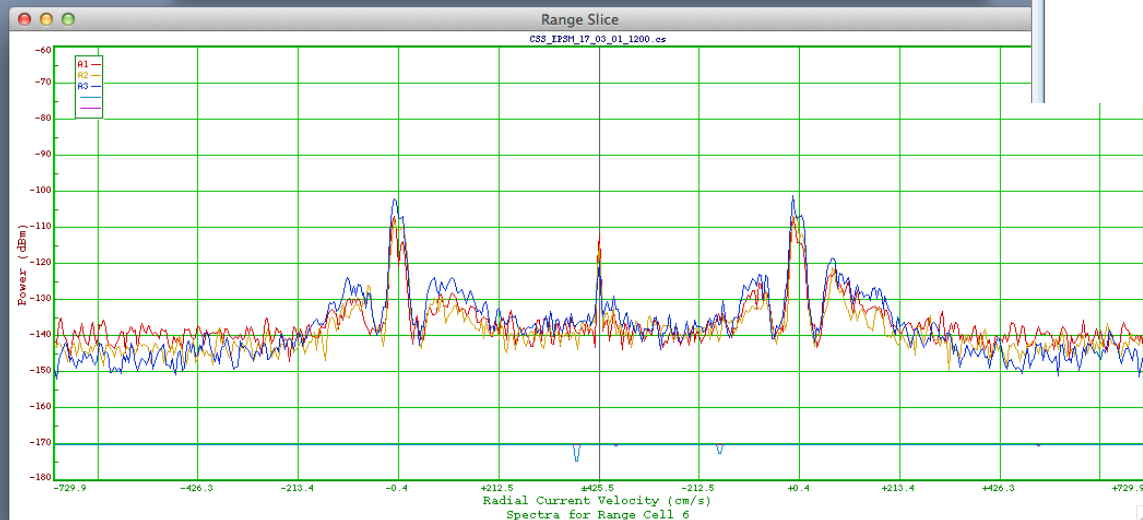
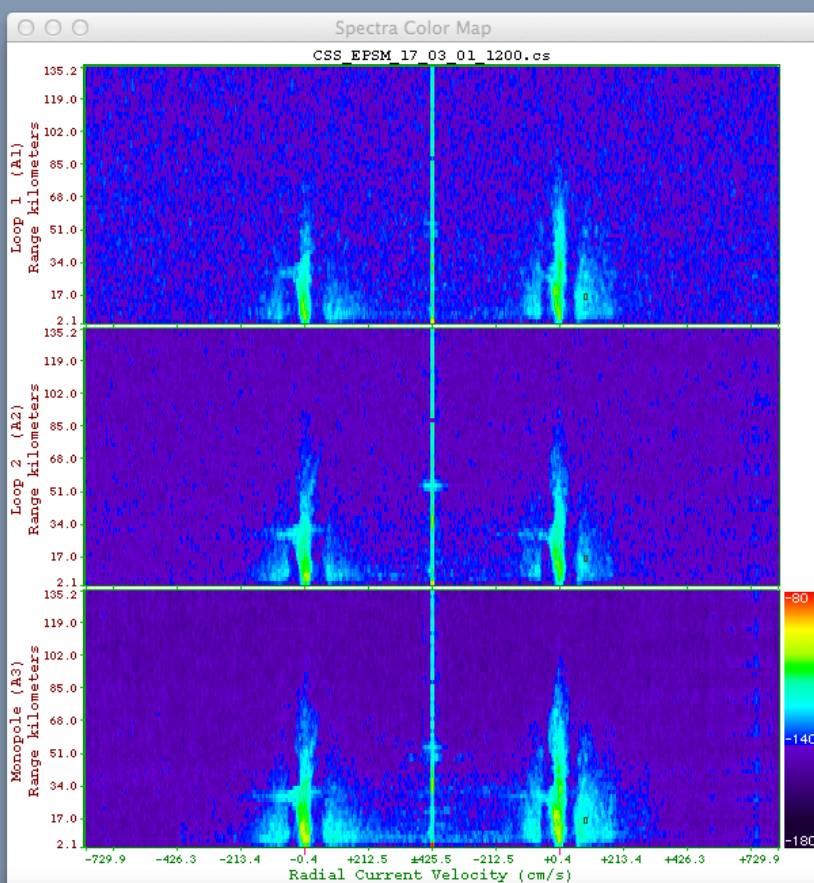


Attention was focused on monitoring Ana and Emma storms. Although weakened to a tropical cyclone, they brought severe weather in terms of heavy rain, damaging gusts (up to 120 km/h-1), large waves, small tornados and storm surges with consequent coastal flooding.



MATERIALS AND METHODS





WVLM_EPSM_2017_03_01_0000.wls

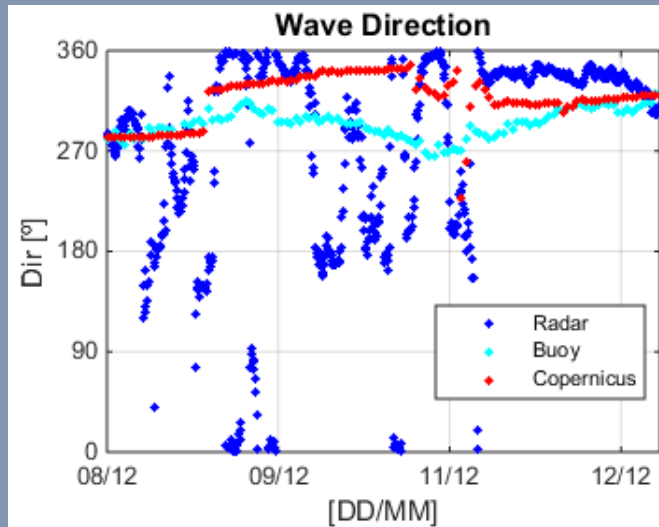
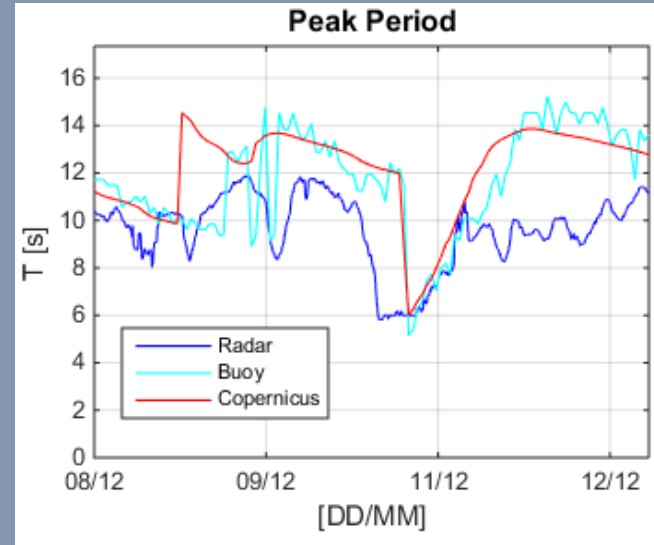
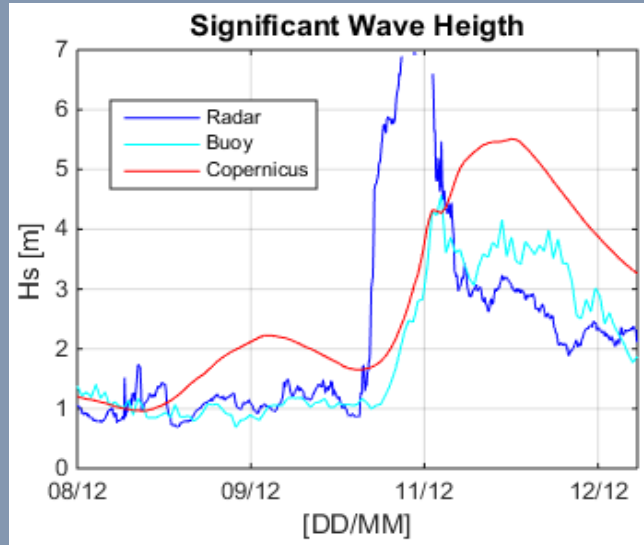
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% Time	-----Wave-----				Wind													
% FromStart	Height	Period	Dir.	Dir.	Spectra	Distance	Range	Doppler	Wave	Vector	Time							
% (seconds)	(m)	(s)	(deg)	(deg)	Count	(km)	Cell	Points	Method	Flag	Year	Mo	Dy	Hr	Mn	S		
0	3.67	12.84	279.5	10.0	7	12.8849	6	12	1	0	2017	03	01	00	00	00		
600	3.10	12.65	267.9	10.0	7	12.8849	6	11	1	0	2017	03	01	00	10	00		
1200	3.26	12.84	273.7	10.0	7	12.8849	6	12	1	0	2017	03	01	00	20	00		
1800	3.67	13.15	279.2	10.0	7	12.8849	6	10	1	0	2017	03	01	00	30	00		
2400	3.26	13.15	271.8	10.0	7	12.8849	6	10	1	0	2017	03	01	00	40	00		
3000	3.26	13.33	269.7	10.0	7	12.8849	6	13	1	0	2017	03	01	00	50	00		
3600	3.26	13.15	266.8	10.0	7	12.8849	6	10	1	0	2017	03	01	01	00	00		
4200	3.25	13.02	260.7	10.0	7	12.8849	6	14	1	0	2017	03	01	01	10	00		
4800	3.25	13.02	264.1	10.0	7	12.8849	6	14	1	0	2017	03	01	01	20	00		
5400	3.08	12.76	272.4	10.0	7	12.8849	6	14	1	0	2017	03	01	01	30	00		
6000	2.95	12.72	277.6	10.0	7	12.8849	6	13	1	0	2017	03	01	01	40	00		
6600	3.08	12.76	281.3	10.0	7	12.8849	6	14	1	0	2017	03	01	01	50	00		
7200	3.25	12.76	272.5	10.0	7	12.8849	6	14	1	0	2017	03	01	02	00	00		
7800	3.08	12.76	285.5	10.0	7	12.8849	6	14	1	0	2017	03	01	02	10	00		
8400	3.08	12.76	281.2	10.0	7	12.8849	6	14	1	0	2017	03	01	02	20	00		
9000	3.63	13.07	161.8	10.0	7	12.8849	6	12	1	0	2017	03	01	02	30	00		
9600	3.63	13.07	173.7	8.6	7	12.8849	6	12	1	0	2017	03	01	02	40	00		
10200	3.63	13.07	151.4	7.1	7	12.8849	6	12	1	0	2017	03	01	02	50	00		
10800	2.86	12.88	194.7	7.1	7	12.8849	6	12	1	0	2017	03	01	03	00	00		
11400	2.72	12.78	231.1	7.1	7	12.8849	6	14	1	0	2017	03	01	03	10	00		
12000	2.75	12.88	233.3	7.1	7	12.8849	6	12	1	0	2017	03	01	03	20	00		
12600	2.75	12.88	233.3	5.7	7	12.8849	6	12	1	0	2017	03	01	03	30	00		
13200	2.75	12.88	252.9	5.7	7	12.8849	6	12	1	0	2017	03	01	03	40	00		
13800	2.86	13.04	261.1	7.1	7	12.8849	6	12	1	0	2017	03	01	03	50	00		
14400	2.75	12.88	258.3	8.6	7	12.8849	6	12	1	0	2017	03	01	04	00	00		
15000	2.75	13.02	263.5	8.6	7	12.8849	6	10	1	0	2017	03	01	04	10	00		
15600	2.88	13.02	257.5	7.1	7	12.8849	6	10	1	0	2017	03	01	04	20	00		

RESULTS

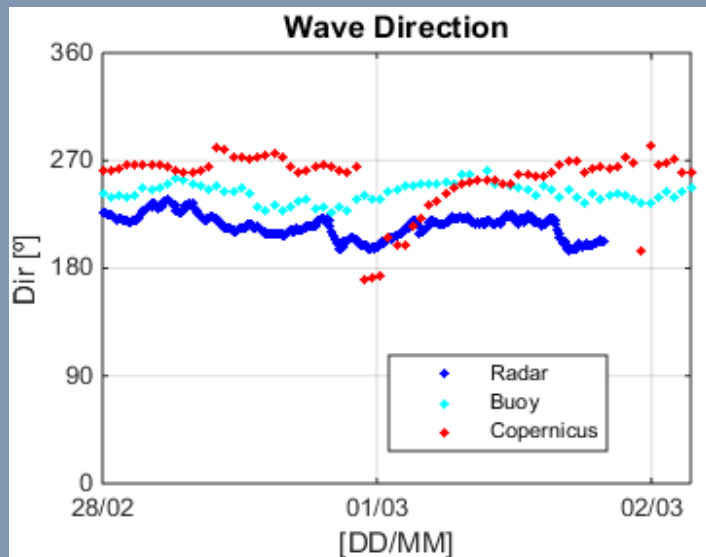
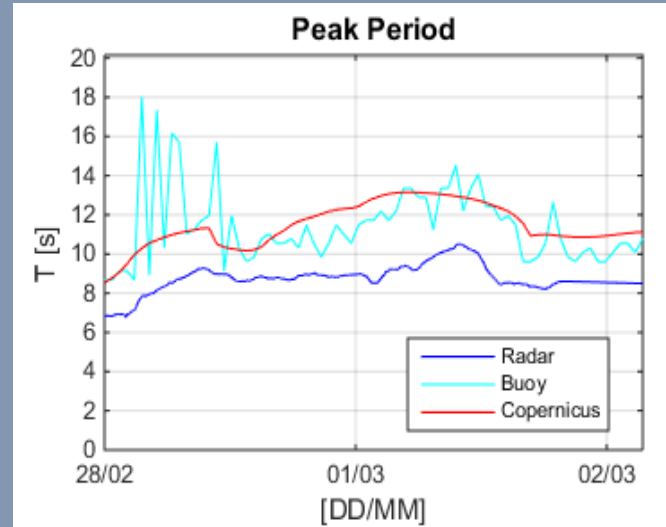
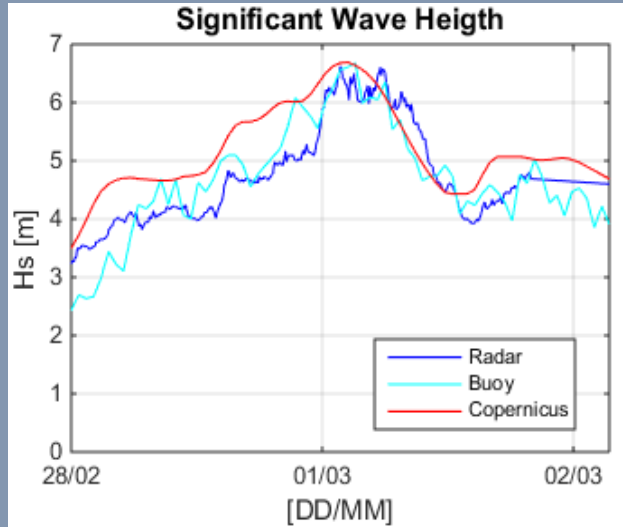
Preliminary HF Radar Wave Height Estimations (Ana Storm)



08 December - 13 December	Hs (m)	Tp (s)	Dir (deg)
RMS	1.26	2.99	25.65
CI	0.54	0.35	-0.18
Availability SGTR (%)	95.70	95.70	95.70
Availability Buoy (%)	100.00	100.00	100.00
08 December - 13 December	Hs (m)	Tp (s)	Dir (deg)
RMS	1.69	3.10	5.53
CI	0.47	0.29	-0.16
Availability SGTR (%)	95.70	95.70	95.70
Availability Copernicus (%)	100.00	100.00	100.00

RESULTS

Preliminary HF Radar Wave Height Estimations (Emma Storm)



28 February - 02 March	Hs (m)	Tp (s)	Dir (deg)
RMS	0.58	3.56	27.74
CI	0.84	0.30	0.57
Availability SGTR (%)	91.118	91.118	91.118
Availability Buoy (%)	100.00	100.00	100.00
28 February - 02 March	Hs (m)	Tp (s)	Dir (deg)
RMS	0.68	0.89	18.42
CI	0.80	0.78	0.40
Availability SGTR (%)	94.118	94.118	94.118
Availability Copernicus (%)	100.00	100.00	100.00

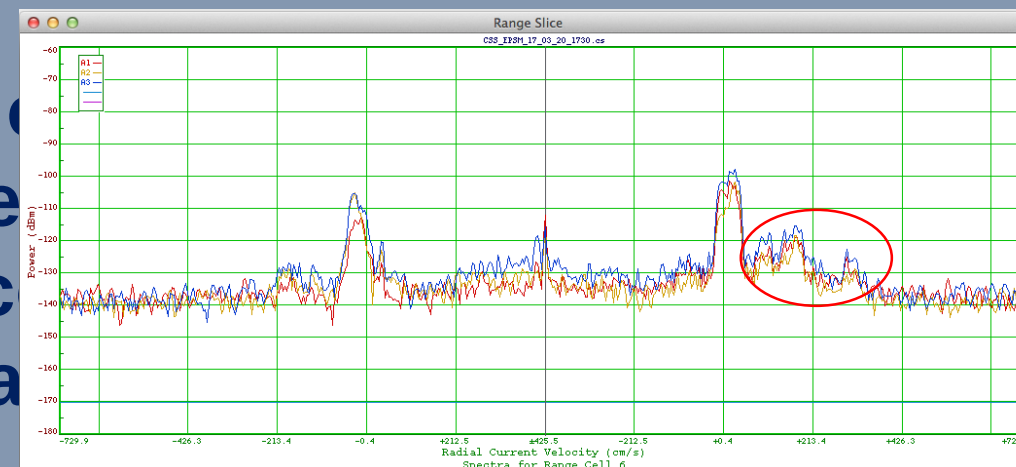
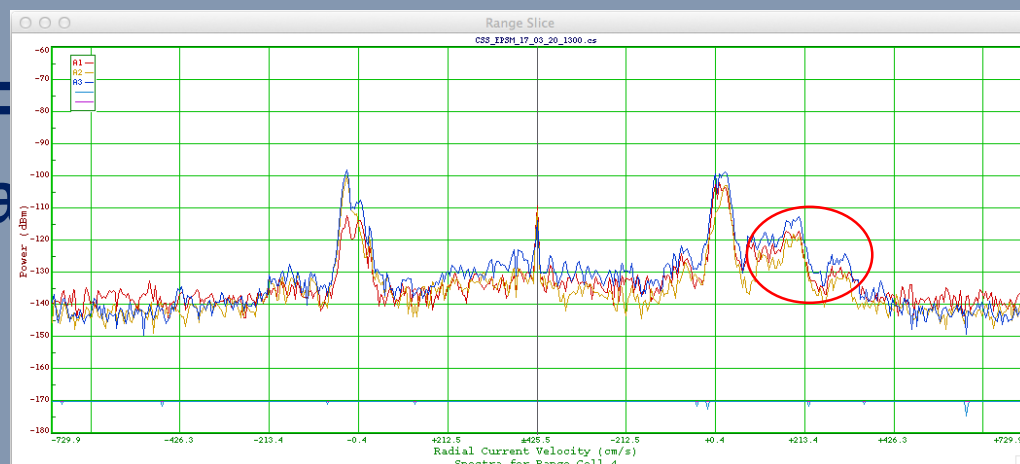
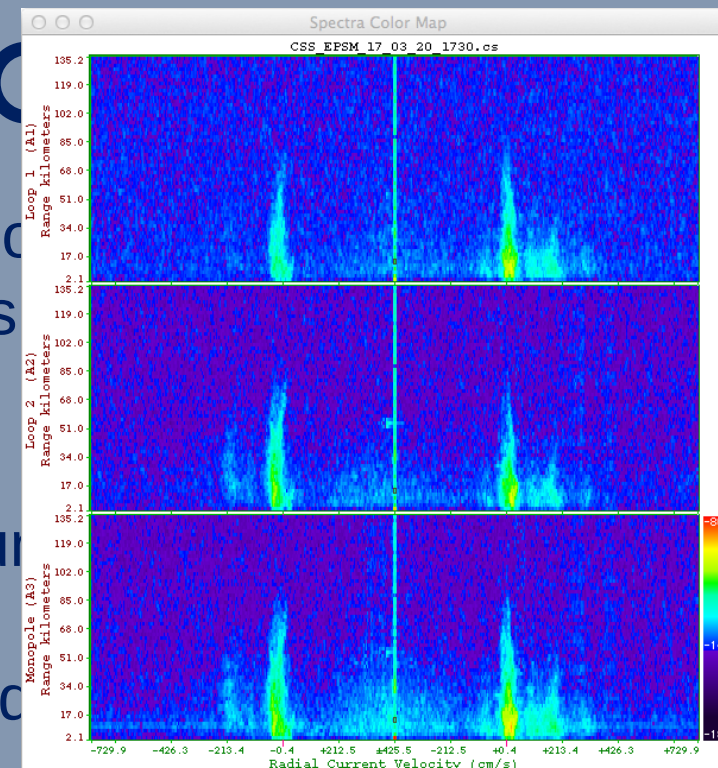
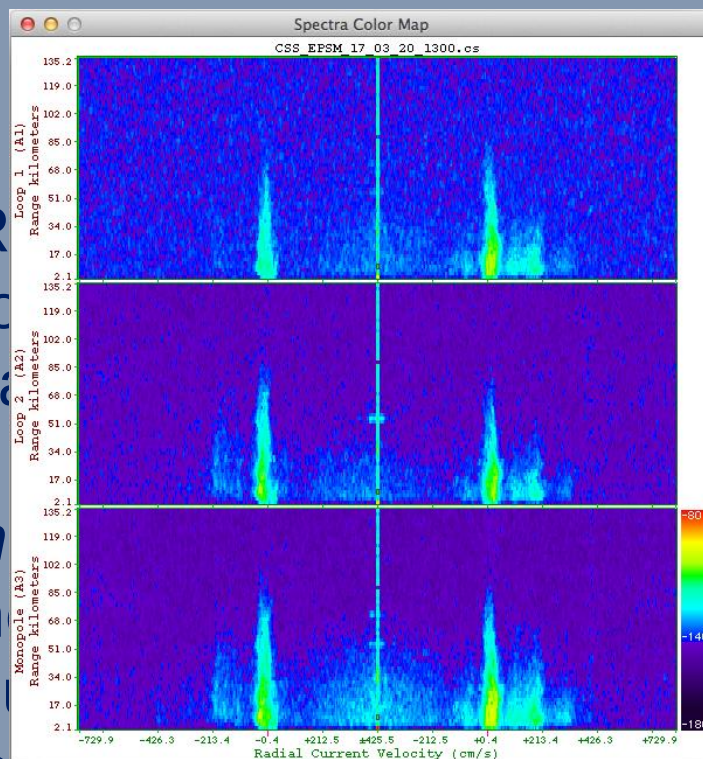
The HFR wave info in Hs mea

Since *in* constrain Copernic specific severe weather episodes.

CONCLUSION

ed to be a good, although a s
some instrum
look coastal
oy can provid

retrieve
detected
HFR is
use of
ation for



THANK YOU

Acknowledgements

The authors would like to thank the Interreg Atlantic Area project MyCOAST, (EAPA 285/2016) co-funded by the ERDF (EU).